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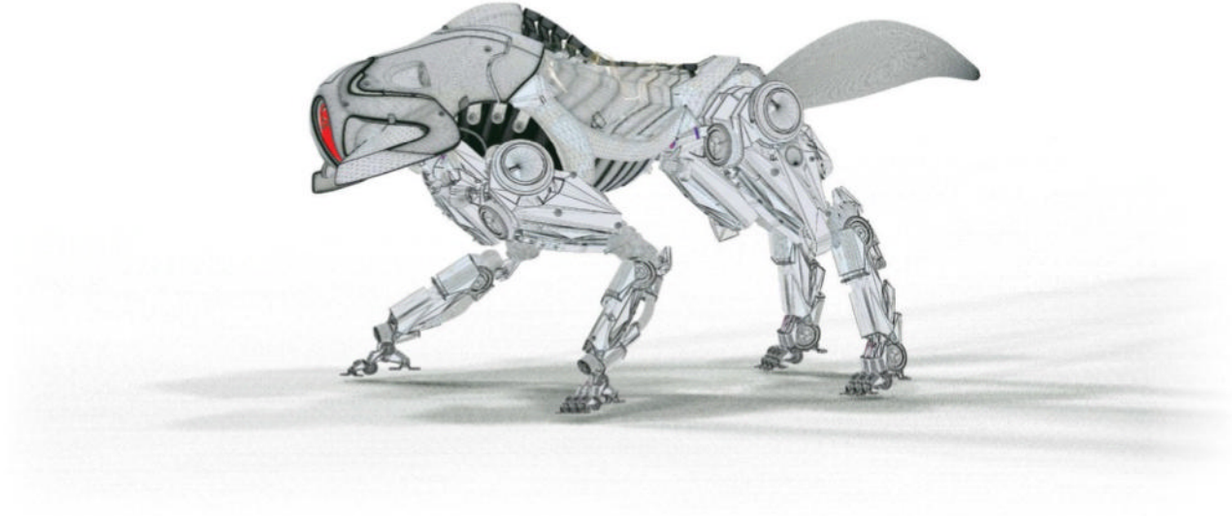
Welcome to THE SCI-FI & FANTASY ART BOOK

One of the best things about sci-fi and fantasy-inspired art is the fact that there are no constraints, you don't have to abide by rules or reality, you simply have to create. Whether your specialism lies in character creation, concept artwork, landscapes or fantastical creatures, the Sci-fi & Fantasy Art Book has something for you. Covering programs including Photoshop, ZBrush, Maya, 3ds Max, MODO and Blender, we delve into techniques and ideas with the help of expert artists. From building intricate characters and furry creatures to creating whole worlds from scratch, there's plenty of advice to help better your artwork and further your field of vision and expertise. In this latest edition, find out how to use programs in conjunction with each other to produce beautiful designs, and get top tips on how to create everything from mech animals and superheroes to aliens and complex concept art. Put your mind into its creative gear and jump into the world of sci-fi and fantasy art now.



SCI-FI & FANTASY ART

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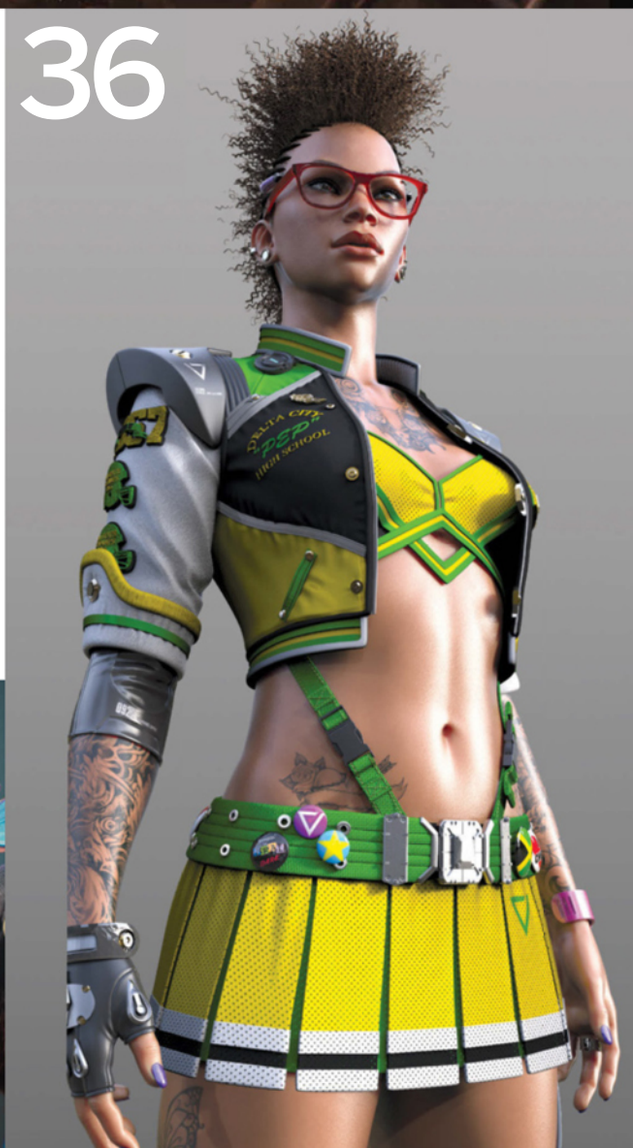
Contents

08
The rules of fantasy art
From concept and composition to tools and technique

Character

Creatures



Landscape

Concept

> Sci-fi and fantasy concept painting is one of the biggest sub-genres of digital art, so it pays to learn the rules

The rules of Fantasy Art

We explore the rules of digital painting, from concept and composition through to tools and technique

Fantasy and sci-fi concept painting is one of the biggest sub-genres of digital art, and in order to be successful in this area, it pays to learn the rules of planning, composition and application. Artists who master this type of artwork will find their skills essential in the movie, videogame and entertainment industries, where the need to convey places and objects that don't yet exist is common.

Over these pages, we will be looking at the work of four amazing artists who have created awe-inspiring artworks on the digital canvas, from the likes of Martin Bland's tech-macabre cyber cityscapes to Andreas Rocha's sci-fi utopias. Dedication and practice count for much when achieving these styles, as well as natural artistic ability, but there are plenty of rules and methods that you can learn and apply to your artwork to improve your creations. We talk with some of the fantasy art industry's top contributors and get them to reveal their top tips and tricks. Even if you're not into fantasy landscapes, the advice here is relevant across all genres of digital art. So read on to start on your path toward better digital paintings.

Concept and planning

There is nothing more daunting than staring at a blank canvas with no idea of where to start. When constructing any conceptual landscape work, thorough planning is essential to the visual development of the piece. But are there any proven methods for getting going on a project, a perfect method of planning that will guarantee the success of a piece? Portuguese artist Andreas Rocha, an up-and-coming favourite in the gaming and editorial arenas, cites both motivation and thorough research as key elements in his workflow, but he also suggests getting the basics down first: "Without research, the initial concept can lead to failure. I would suggest that it is best to first think briefly about what you want to portray, just the general guidelines." This helps you to find that balance between what your imagination would like to achieve whilst maintaining a sense of realism within the piece.

Rocha admits to a preference of using specialist books over the internet when in these early research stages. "For instance, you want to use some Art Nouveau motifs in a fantastic castle," he explains. "You can find examples on the internet, but specialised books will give you much better quality images taken by professional photographers, all condensed into one handy resource. If you opt for the internet, you will almost certainly not get the best photos and you will lose time filtering the results."

Despite this, the world wide web does hold some benefits according to Rocha: "On the other hand, the internet displays its content in digital format, which is great for organisational purposes. Keeping things organised will help to transform your initial painting process into a combination of fluid, dynamic actions where there is no time for interruption."

Rocha endorses the advantages of stock photography to help speed up the workflow in digital applications such as Photoshop and other painter programs. "Photographs can be really helpful in the conceptualising process," he explains. "Photos not only contain information about an object, but they also show us how the object interacts with its surroundings and this can be important in portraying the object realistically." He does warn artists not to become too reliant on photos, though, if you want to maintain some individuality in your work: "Photos should be used as a complement. They should not dictate what

Mostly monochromatic; some hint of red (maybe flags) later turned into single light source

Central element (tower) placed at third of layout (rule of thirds)

Background only hinted – overcast sky blurs detail

Contrast around main elements; surrounding low contrast/dark

Observation of the behaviour of nature (images stored in memory, others from photography) clouds, reflections, atmosphere

Low eye-level horizon; vanishing points off canvas – low dynamism leads to a calm setting

Home: "Homage to one of Lisbon's most charismatic monuments: The Tower of Belém"
© **Andreas Rocha**

you are portraying. Conceptualisation has to involve the creative side of the brain and allowing your own imagination to take control is important."

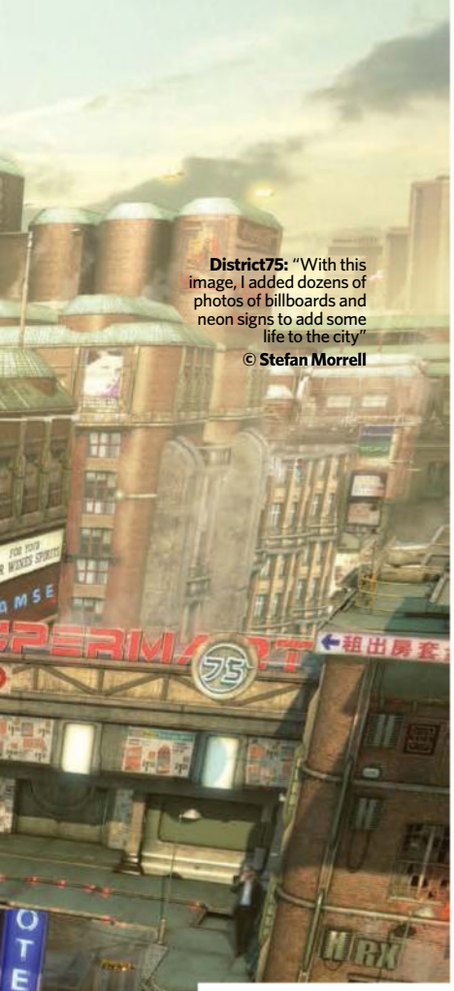
The value of good motivation and stock resources is in providing the ability to put down strong ideas in a simple basic language. Sketches and line work are fundamental in developing the conceptual composition for any artist, as Rocha explains: "Since they set the limits, you can quickly evaluate the content as things get defined very early on. Another advantage is that once the sketch is done, you can quickly add value underneath the line work by putting this layer in Multiply mode in Photoshop, above the value layer. Using this method, the filling out of forms becomes a very quick process."

Different artists have different processes when it comes to starting their images. New Zealand-based concept artist Stefan Morrell voices his own opinion on the early stages of image creation. "For the initial development stages, I try to avoid colour.

> "Photos not only contain information about an object, but they also show us how the object interacts with its surroundings"

I'm always very concerned with values, and as such, black and white or muted colours are used more often. In later concept stages, it certainly becomes more important." The artist, who is also a content creator for DAZ 3D, sanctions the use of digital media and its assistance in the pre-production stages. "In Photoshop, I mostly use the Chalk brush for roughing images out. It's the ideal brush for quickly building up values and, when used with a graphics tablet, you can work very freely. The initial thumbnail process is more about values and shapes than anything else. I try to work with three basic values in sketches, dark for the foreground, mid-grey for the middle and a light grey for the background. These would also be the same values that I work with when using COPIC graphic pens on paper."

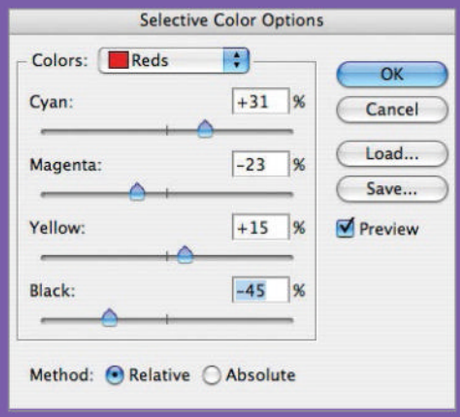
Morrell also finds that digital software allows him to construct innovative compositions in a novel fashion, as he explains: "I have explored many different techniques of overlaying several images to 'find' an image, but that tends to be quite a random way of working. It's great if you have no idea to begin with and just want to explore shapes; you simply overlay several images in the one Photoshop file and use the blending modes of each layer to randomly change the look of each layer. Finally, when all the layers are combined it can come up with some fun ideas."



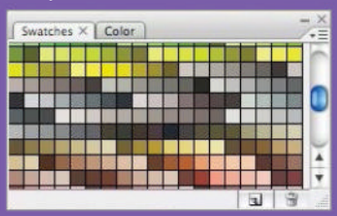
District75: "With this image, I added dozens of photos of billboards and neon signs to add some life to the city"
© **Stefan Morrell**

Essential tools
A guide to some of the key features of Photoshop

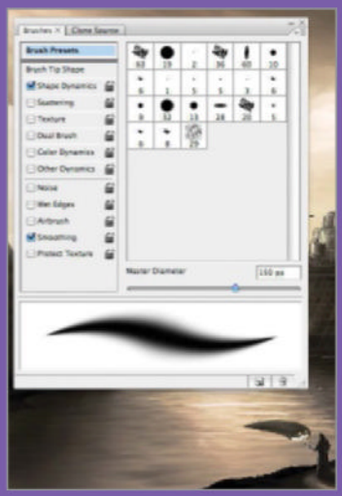
Layered effects
Photoshop's introduction of editable layer effects have been a real plus for producing multifaceted compositions, as Morrell explains. "In a production environment, photographed elements are essential. Something as simple as a photo of a stone wall can be overlaid onto a basic Photoshop drawing to give the appearance of a castle wall. Rapidly building up textures is where Photoshop comes in handy; it's all about speed and ease of use."



Setting the mood
Photoshop supplies a range of adjustment options to later enhance your colours. Variations, Hue/Saturations and adjustment options such as Channel Mixer and Color Balance can enhance effects, as Sarel Theron explains. "Just as music helps build mood, colour can also help create a certain mood within a painting. A contrast between cooler and warmer hues can create impact as well as help to define focal points. I tend to pick the kind of palette that best suits the subject, eg warm brown tones for deserts and cool crisp blues for icy environments."

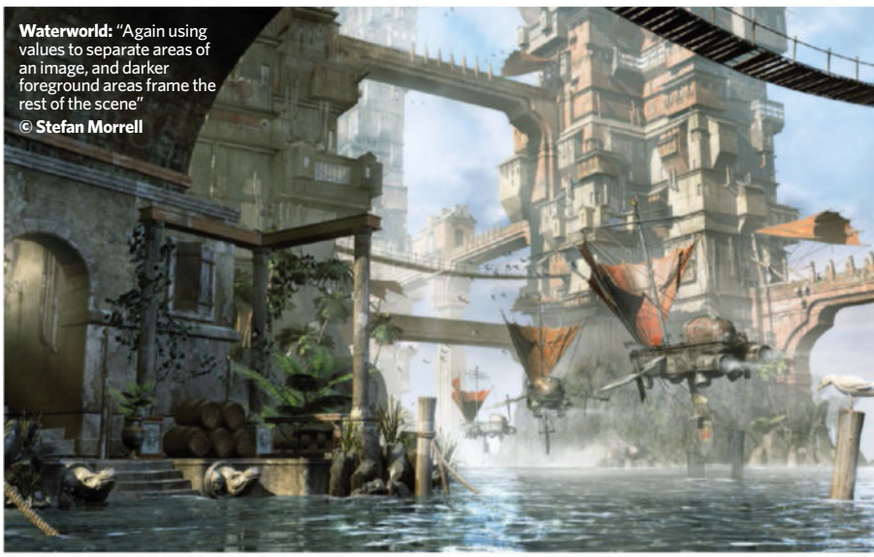


> "Rapidly building up textures is where Photoshop really comes in handy; it's all about speed and ease of use"



Simulated strokes
Photoshop's improved brush capacity has excelled the limits of concept painters, as Martin Bland reveals. "The brush engine is now massively powerful, and any number of effects can be applied with a few custom brushes. Take painting chain links, for example. It would have taken an age to do a few versions of the software back, but now, one custom brush and one sweep of said brush and you have a chain!"

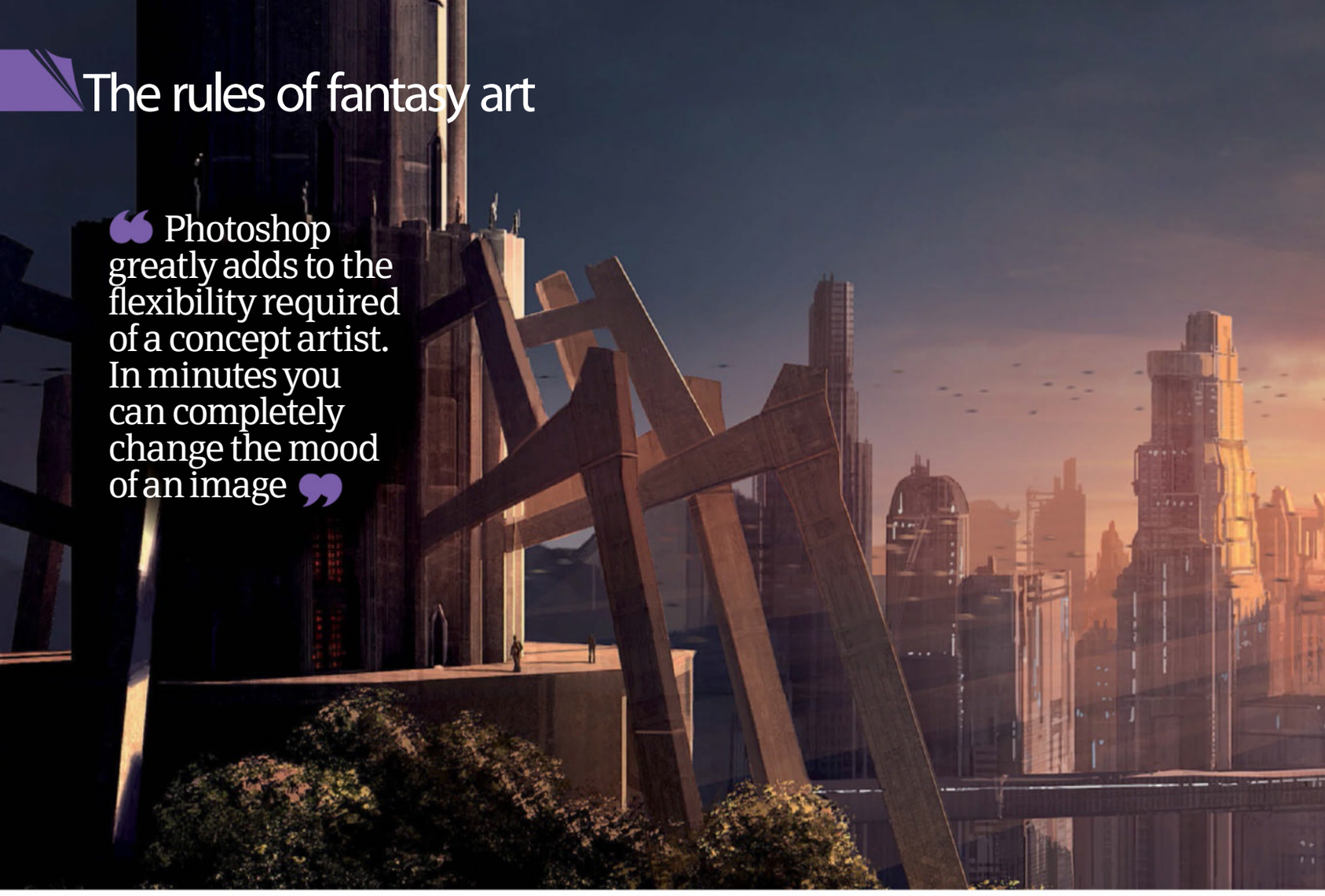
The Majestic: "Here I wanted to show off the height of the building, adding atmospheric perspective to the very top of the building so it almost blends into the sky"
© **Stefan Morrell**



Waterworld: "Again using values to separate areas of an image, and darker foreground areas frame the rest of the scene"
© **Stefan Morrell**

The rules of fantasy art

> Photoshop greatly adds to the flexibility required of a concept artist. In minutes you can completely change the mood of an image



Industrial City WIP:
"An industrial cityscape in a 'steampunk' setting. While it's still a work in progress, it serves as a good example of how colour can create mood"
© **Sarel Theron**

The vanishing point is placed appropriately in the central section grid to draw the line of sight and accentuate perspective

The horizon is set on the horizontal line dividing the lower third of the photo from the upper two thirds. This allows the linear features in the photograph to flow between sections

The focal point of the painting is the steam train and has been placed accordingly in one third across of the composition

Divide your canvas into thirds, horizontally and/or vertically, placing your important objects on them. Keep vanishing points off-centre for more interest

Sentinel bay (right): "Another fantasy-themed painting that demonstrates both the use of scale and atmospheric perspective"
© Sarel Theron

Perfect composition

Once you have the basic ideas down on paper, then it's time to start thinking about building up the composition of your painting. Stefan Morrell uses 3D software to its full advantage, saying: "In the initial conceptual phase, I always work with some basic perspective lines and a horizon drawn out. When working with buildings or cityscapes in particular, this is very important. Getting your vanishing lines and correct perspective laid out in the initial stages will save a lot of pain down the road. This is not so important if your scene is pure 3D, but when working with something like a 2.5D matte painting, it's an essential step to get right."

Once the composition has been realised and 'fleshed' out, be it line drawing or colour washing, the next logical creative step for a concept artist is to visually substantiate the scene and here modern digital software really excels – something that Morrell agrees with: "Using a program like Photoshop greatly adds to the flexibility required of a concept artist. In a matter of minutes you can completely change the mood of an image. Embracing technology has helped my art grow in ways I could never have imagined, and it's through valuable tools like Photoshop that these ideas can be imagined."

Digital matte painter Sarel Theron also agrees with this attitude: "I would say that Photoshop has definitely advanced the possibilities of colour application. Adjustment layers and colour overlays enable the artist to make chromatic changes without permanently affecting the layers beneath." This encourages experimentation, which in Theron's opinion can only lead to better, more vibrant artwork.

Providing much of this himself, including high-end commercials, television productions and various pitches, Theron continues: "Clever use of scale can help to provide depth. Naturally, the further away the object is the smaller it appears. Often the challenge with fantasy landscapes is portraying the scale of objects that don't exist in real life. This can best be achieved with the use of atmospheric perspective as well as juxtaposing real-life objects with the imaginary ones."

To Theron these are mere suggestions, believing art should be without any hard rules. However, there is one valuable exception that he sanctions: the rule of thirds. He explains: "Simply put, a canvas is divided up into thirds, both horizontally and vertically. The focal point of the painting is then placed either one third across or one third up or down the picture or where the lines intersect. Framing helps to prevent the viewer's eye from leaving the canvas while also guiding it back in towards the focal point, and you can see that in any good photo."

Terra Ariose: "This futuristic cityscape was aided by laying down custom brushes as a base to work from"

Create atmosphere

Once the basic ideas have been put down and the composition is decided, it is time to start thinking about the lighting and colours that you are going to use in your images to help create atmosphere.

Sarel Theron talks about 'atmospheric perspective' in his images: "This defines our perception of objects as they recede into the distance. The further away the object gets, the lighter the tone becomes, while colours tend to cool and contrasts lessen. Air is not invisible as most people seem to think, and it's important to take it into consideration when painting distant objects." Here he observes another key factor in concept art production. The use of colour and lighting in an image is essential. This can be crucial in correctly portraying theme and obtaining an emotive response.

Theron agrees, saying: "Just as music builds mood, colour can also help create atmosphere within a painting. Contrast between cooler and warmer hues can create impact as well as help to define focal points. I'm also aware that certain colours can produce certain feelings or emotions, although generally I tend to pick the kind of palette that best suits the subject, for example warm brown tones for deserts and cool crisp blues for ice environments." He continues: "However, lighting is probably the most important aspect. It helps to describe the form, colour and texture of the landscape. A landscape artist does not outline shapes; he paints them as light defines them. Colour helps a lot with setting the overall mood and atmosphere and, as with light, can be used to define focal points."

The correct application in the creation of light gives a composition a pragmatic essence, as UK-based conceptual artist and tutorial provider Martin Bland explains: "Successful lighting and colour choices make the difference between something looking real and tangible to something that looks like a flat 2D illustration. Conceptually, more often than not, you are asked to take an idea, and bring it to life.

Bland continues: "Without proper lighting there is no life, no spark to an image, no realism. In order to make people believe what they are seeing, you need to trick the eye into believability, which is all done by lighting and the creation of depth." Addressing the application of paint to create light and colour, Bland exposes further practices to creating realism. "Even if you paint 99 per cent of your scene from scratch, an added texture or effect can make a huge difference to the end product. A well-placed texture overlay to age an area of metalwork, ground planes muddied up with a texture, overlaid and skewed into perspective to add to the believability and an Unsharp Mask on your final-sized flattened image to make detailed areas pop. Used subtly, these can add a lot to help a final image."

> "Lighting makes the difference between something looking real and something that looks flat"

Yet when practising concept art, the 'end product' goes beyond mere invention. Presentation is just as essential in delivering powerful visuals. Bland provided some authoritative final thoughts when he commented, "It depends a lot on the image; if it is a very low contrast, darker image or a very light image, then you need to be careful and consider the background of where your image will be. If you put a dark image on a very light background it can lose detail, so a dark border or matting may be necessary to alleviate the effect."

While the tips revealed here are largely based on the creation of fantasy landscapes, they are just as relevant across any genre of art as composition and the creation and capture of atmosphere are always essential to an image.

Learn more

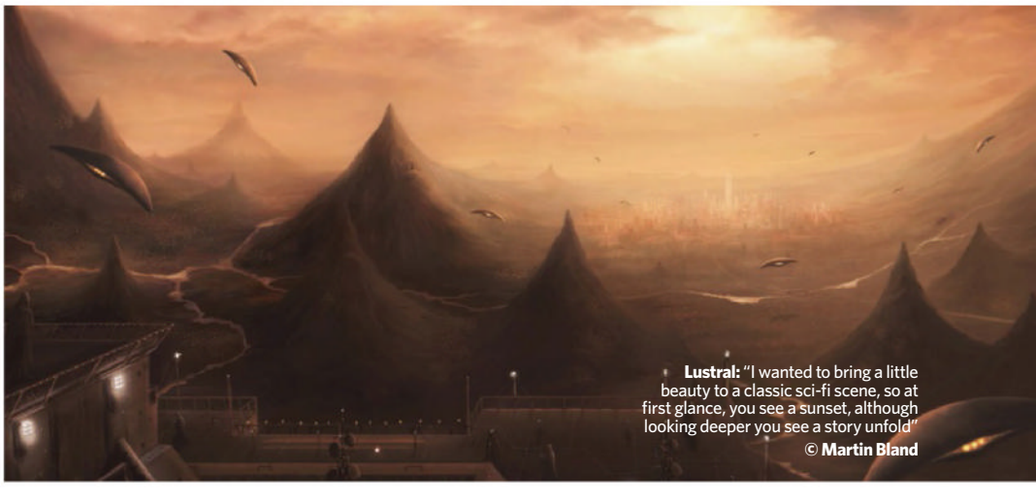
Throughout this feature we have gleaned some amazing advice from our four top artists. However, there are plenty of resources out there that can aid your learning further. Our artists reveal the places they turn to in order to continue their learning or gain inspiration.

Martin Bland says: "A tricky question to answer as it is better to learn from a thousand sources than to stick to one. What I can add is, for concept art, seeing people's raw unfinished brushstrokes on quick sketches and paintings can teach you much more than any tutorial can. Picking apart strokes and seeing what made an image come together is the closest you can get to seeing into an artist's soul, so speed-paint threads are a massively important resource. There are a few very busy and useful threads at **sijun.com/forums**, **CGTalk.com** and **ConceptArt.org** forums."

Andreas Rocha also has a list of resources that he recommends for further learning: "I would say 3D Total's excellent Digital Art Masters books and CGSociety's brilliant D'Artiste series of books. I also strongly advise artists to build a library of inspirational works by other artists appearing on **CGTalk.com** and **digitalartistdaily.com**."

Finally, Sarel Theron suggests: "Online community forums such as **ConceptArt.org**, **MattePainting.org** and CGSociety are great places to meet other artists, talk shop and have your work reviewed by peers. Even better is if you can get an internship at a post-production facility, such as ILM (Industrial Light and Magic). Finally, there is a lot to learn technique-wise from trade magazines such as Photoshop Creative."

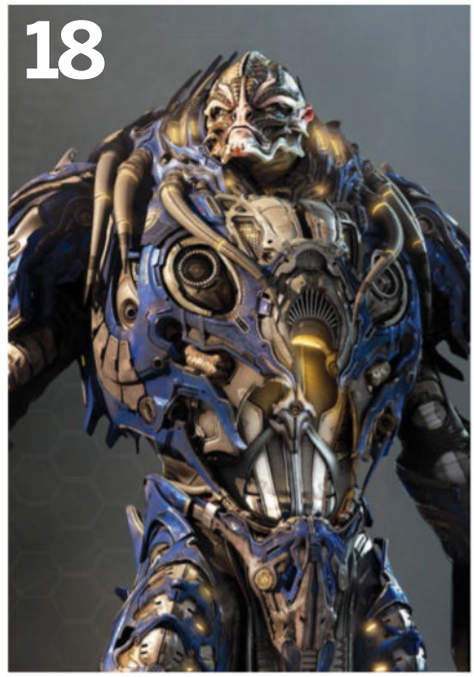
The Austringer: "722-705 BC – an Assyrian bas-relief found in the ruins at Khorsabad during the excavation of the palace of Sargon II (or Saragon II) has been claimed to depict falconry. It's only fitting that the tradition would go on way past our understanding"
© Martin Bland



Lustral: "I wanted to bring a little beauty to a classic sci-fi scene, so at first glance, you see a sunset, although looking deeper you see a story unfold"
© Martin Bland

Character

Master the art of sci-fi and fantasy characters



“We all grew up with magic as children. But how do you portray such hidden powers in painting?”

50

Artist Info

Ben Erdt
Personal portfolio site **www.ben-erdt.de**
Country **Netherlands**
Software used **Maya, 3ds Max, MODO, ZBrush, MARI, NUKE, Photoshop**
Concepting and producing both hard-surface and organic models

Create armoured sci-fi characters

Lukruk – The Thelarian Elite 2012

ZBrush Maya

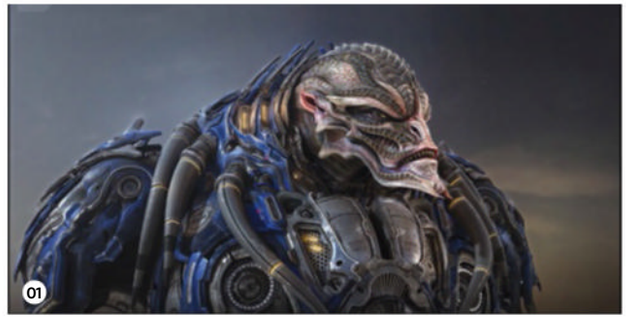
Create a highly complex and functional armoured alien character, from concept through to final vision

Lukruk is an armoured alien character I created as an exercise at Vancouver Film School. During this process you'll get an insider's view of his creation from inspiration to the final render. By the end of the steps you'll have a full understanding of how Maya, MODO, ZBrush, MARI, Photoshop and NUKE can be used to achieve the final result. Find all of the tutorial files at **filesilo.co.uk/bks-890**.

Lukruk was a very complex project from both a design and technical point of view, so here you can get a closer look at how to design and build complex characters with rigging and animation in mind, without compromising the original design intent. I'll also share my approach for keeping clean topology for efficient subdivision, rigging, texturing and rendering. This project was a great learning experience for me in fields such as design, modelling, texturing, rigging, animation, rendering and VFX, as well as how to collaborate with other disciplines. I hope the little nuggets of experience shared here will help and inspire you with your own characters.

Make a concept

Develop who and what your character is



01 Turn inspiration into a concept I imagined a futuristic knight standing on a high platform. Since he's extra-terrestrial, I wondered what if an alien race – after their first contact with mankind – became inspired by human history, especially by the stories about the Knights Templar and the samurai. If they used their superior technology and created their own group of protectors, what would a member of this group look like? I imagined them as characters who are spiritual, intelligent and serene – like a group of contemplative listeners – but also as powerful and unpredictable creatures. They have a monastic lifestyle defined by traditions and strict rules. Only their strongest hatchlings are selected and Lukruk was one of the chosen.

02 Take the design in-depth As the head is the focal point of the character, I wanted to make sure Lukruk had a very expressive face, attitude and a great design. I wasn't happy about the first iteration, because he didn't look as powerful as I wanted. I decided to make his head more angled and sharp along the jaw. The argus monitor lizard was a great reference for this. The elongated cartilage tips on Lukruk's chin further helped to emphasise the shape of the head. To counter the aggressive features of his design a little, as well as to add some conflict to the design, I gave him two small ears.

03 Imagine the body and armour Lukruk's armour was designed to be functional and built for protection, but it's also supposed to have a bit of an elegant and ceremonial touch that comes through the curved lines and shapes. Because I imagined the model having lots of detail, I figured a more humanoid silhouette would be better to read. When putting on the armour, the longer tail was supposed to be a mechanical extension that could be used as a weapon. As a reference for his default facial expression and attitude, I referred to heads of birds of prey such as eagles, hawks and falcons. For the hard-surface parts of the armour I specifically collected images of sports motorcycles, CNC machine parts and landing gear. These were incredibly useful reference points when approaching design as functionality.

Find energy and flow

A friend of mine advised that when turning a person into a stylised cartoon character or caricature, he focuses on capturing the energy, rather than the actual shapes. By this he meant the mental side, such as the essence of the person, as well as the character's personality and story.

From the start I was sure about the energy I wanted this character to have. The rather wavy movement of lizards and the elegant motion of snakes can be used to describe the feeling of the form and lines Lukruk's body is supposed to have.

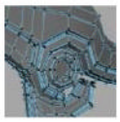
Armoured sci-fi characters

Learn how to

- ☑ Prepare a character concept
- ☑ Model the character's head
- ☑ Block out the body
- ☑ Maintain clean topology
- ☑ Sculpt skin details in ZBrush
- ☑ Unwrap in MODO
- ☑ Prepare a complex model and scene for rigging, texturing and animation
- ☑ Bake Cavity maps in MODO
- ☑ Keep colour tones consistent across multiple files
- ☑ Create a colour concept for texturing a head
- ☑ Design for functionality

Concept

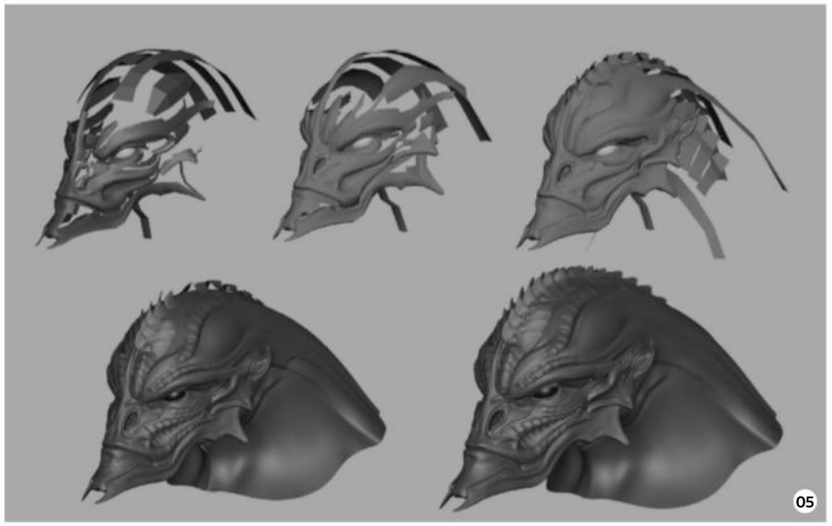
Inspired by the unpredictable-looking reptiles such as tegus and iguanas, the spiritual feel of Gregorian chant, the armour of the samurai, as well as the Knights Templar, I decided to create Lukruk, an armoured alien lizard knight.

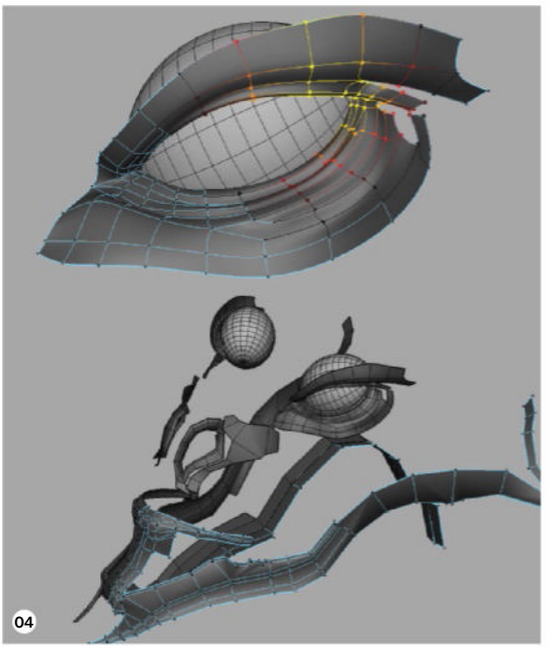


Work on the model

Begin sculpting in Maya

04 Work on the head Starting out in Maya, I always begin modelling the head because it's the most important part of the figure and can determine the look and feel of the character. For example, a bulky head with a fat neck would make me expect an appropriate body to support it. I start with the eyes first, placing a polySphere at the position where the eyeball sits and scaling it to fit. For shaping the eye socket, I usually start with a single polygon and work my way around the eyeball. When beginning work on a model, start simple, as too many polygons can make any fixes later on rather difficult and time-consuming.

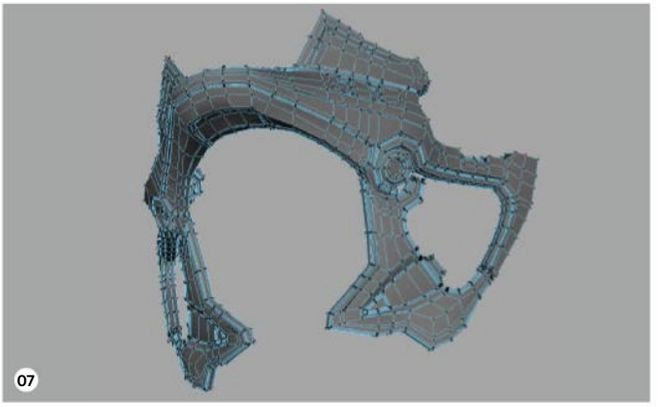


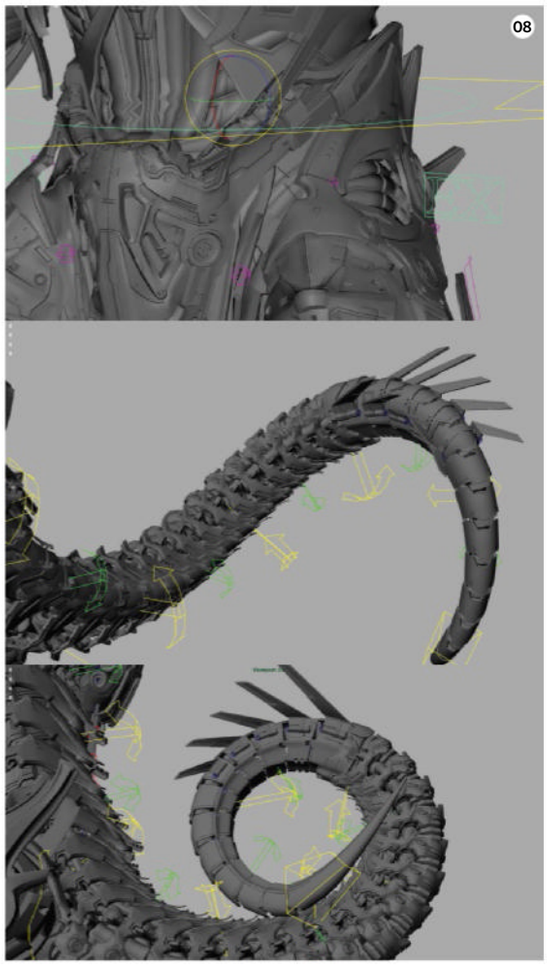


05 Refine the head After blocking in the eyes, I move over to the mouth, ears, lips, the jaw and the bony structures around the head. The goal is to create the individual facial features first and stitch them together at the end. When they are separate, it's easier to move them around and adjust the head proportions. With the eyes filling the spaces in between, you can already see what the proportions and volumes are going to be. Above Lukruk's eyes I created a row of eyebrow-like scales, which help when conveying emotion.

06 Model the body When modelling the body I followed the same approach as for the head. I started modelling, then tweaking very rough representations of the features to build the correct silhouette, shape and volume. In order to manage the amount of detail in the original concept art, I broke it down to primary, secondary and tertiary shapes using colour coding. During the modelling process, I needed to determine the large and small shapes, as well as where they join or overlap one another without constantly referring back the original concept work. The chest was one of the more complex pieces, so I wanted it to fit as neatly as possible. Since everything else was proportionally correct at the end, the chest was very easy to add in.

07 Efficient topology To avoid inefficient geometry, the topology was created to look nice and smooth, with a maximum of two subdivisions, though most of the pieces needed only one. The overall rule was to have complex forms and shapes with a decent amount of polygons for each object. In effect this made life a lot easier for later unwrapping and texturing all the pieces. Always try to stay as clean and efficient as you can and it'll pay off later on.





A clear end goal

I believe it's important to know the end purpose of your creation. In this case the character was a production model for a short movie. At the end we were going to need many high-res textures, as well as a complex mesh with lots of individual pieces that were going to be rigged and animated, but we also wanted to keep the render times as short as possible. I thought about what could be done in advance in order to stay efficient without compromising quality. For example, adding simple colour shaders while modelling can help to get a better overview of the shapes and details. It's also good to sometimes step back and see if the model still fits the concept art and has the same energy.

08 The model versus the rig Making sure that Lukruk wasn't only functional in design but also in terms of articulation was a challenge, so I gave extra focus to areas that were most visible and complex. One of the more complicated parts was the waist, as the tail, shield flaps and legs all come together in this region. To avoid individual armour parts touching or interpenetrating one another, I used a basic proxy rig while modelling to ensure any changes made improved deformation as well as design. Instancing geo here also served to improve iteration times. To make the tail believable and to maximise the range of movement, its inner core was based on a row of single vertebrae inspired by the chameleon – one of the few lizards that can completely roll their tails. This dynamic tail is key to Lukruk's personality and body language.

09 Sculpt skin details ZBrush was used for detailing the head. As for reference, I chose images of crocodile skin to create a smooth transition between the separate scales and skin. Greek turtles have a noisy scale pattern on their neck that I used for inspiration when sculpting the softer skin parts on the character's face. I used the Clay brush to block out scales, then while sculpting in the surface details I kept the design of his head in mind, making sure the details didn't overwhelm the overall aesthetic. The Slash2 brush was used to sculpt in some overlapping scales, while the Slash3 and Dam Standard helped to emphasise the crevices in between. The Inflat and Standard brushes add more volume to the fleshier areas, while hPolish was used to break some of the hard edges of the scales. Once happy with the result, I rendered the Displacement map inside ZBrush. Here I chose an 8,000 pixel-sized map to have an opportunity for a higher-res detail pass in MARI.

10 Develop the tones Before jumping into MARI I wanted to make a colour concept for the head to get a better idea of the possibilities therein. I rendered out basic passes – AO, Depth, Shadow and two Light passes – using the BPR Render in ZBrush, just as a base to paint on in Photoshop. Once they were composited I started to build up the skin, while each group and layer represented a paint step for the skin. As a result I had a clean layer structure that was going to be rebuilt in MARI to achieve the textured look.

Clean up the scene

Prepare and unwrap the geometry for the next stages

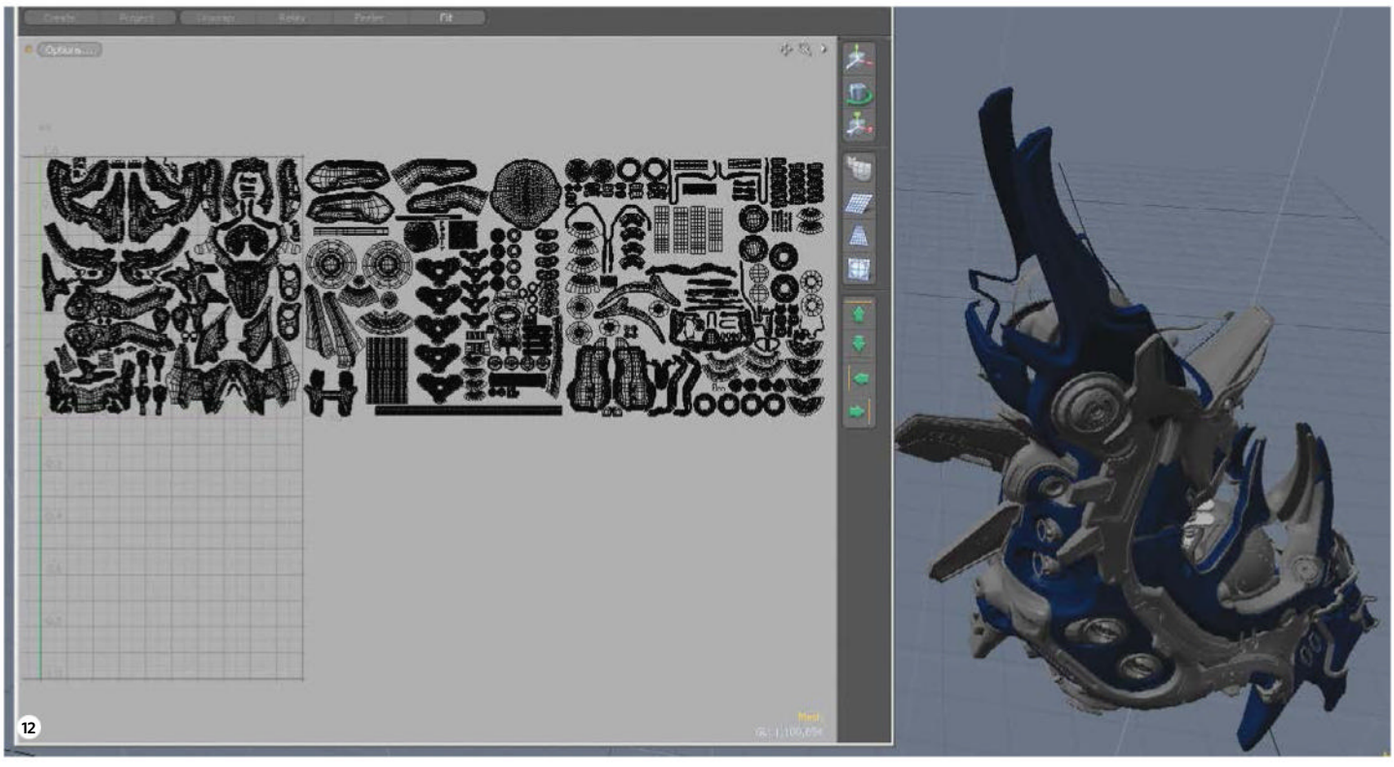
Complexity demands organisation

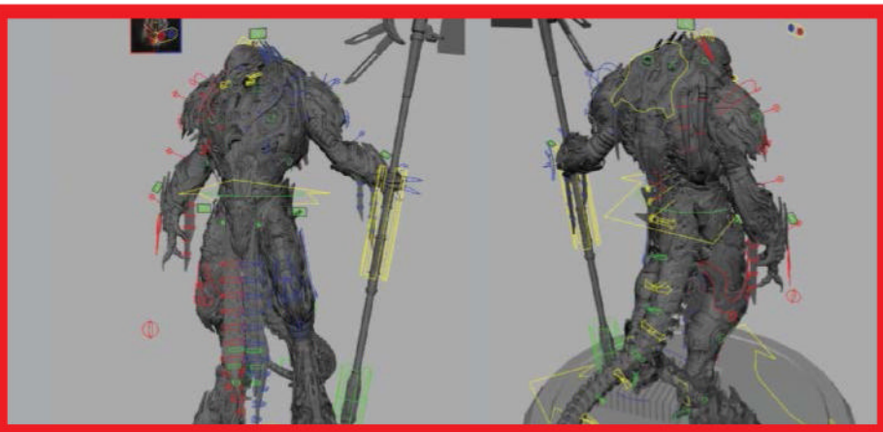
Lukruk has an extremely complex hierarchy. Counting meshes alone, around 1,800 different objects needed to be named, grouped, organised, unwrapped and laid out efficiently in UV space. A clean scene is vital to making your life and those of your colleagues easier. Clean UVs within a good layout are half the texture job and even riggers can benefit. I decided to unwrap everything in MODO because I was going to bake Cavity, Flat, Diffuse and RGB maps in it. Switching applications also brought a bit of variation into this tedious process as I like using a Cintiq when working inside MODO. When it comes to polygon-modelling, especially, this is one of the most artistic methods I have found.

> It's good to sometimes step back and see if the model still fits the concept art and has the same energy

11 Sort and name the pieces In order keep the amount of potential issues low later on, it's important to keep a clean scene. I went through the scene hierarchy and deleted nodes such as empty groups, duplicates, unused nodes and so on, to make sure there was no excess left that could cause problems later. All geo objects were sorted according to the design hierarchy of the character. For example, everything in the left arm was contained in a Group node. Individual objects were then grouped separately according to their visibility, size and shape hierarchy. Each group represented one quadrant in UV space, which was the foundation for the UV-layout and texturing process.

12 Unwrap all the pieces I exported the pieces as individual OBJ files for UV-generation, plus the MTL file to keep the assigned colour shaders inside MODO for later texture-baking. The tools I predominantly used were UV Unwrap, Relax UV and UV Peeler. Unwrap and Relax are helpful for generating and refining UVs of shapes that are more organic and curved. The UV Peeler is a fast tool to unwrap pipes and hoses. For simpler shapes that are more cubic, spherical or cylindrical, I used the UV Projection tool as a starting point, as it offers appropriate projection types. The screenshot shows the finished UVs for a part of the foot.





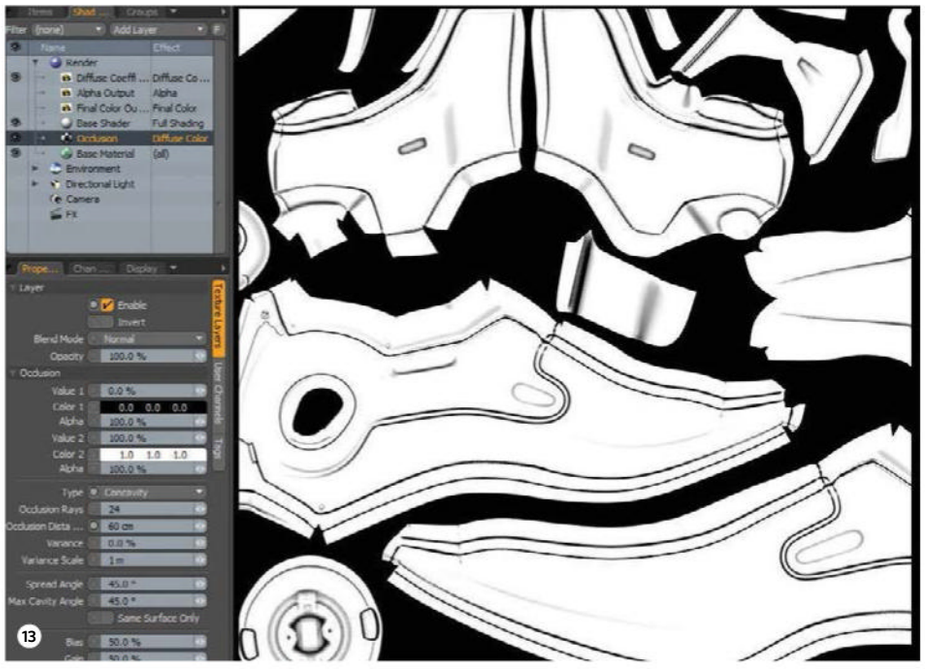
Collaboration is key

This project was a shared effort between several people, with Amir Ronen performing rigging and secondary animation, Colin Giles completing primary animation and myself responsible for design, modelling and texturing. We shared and referenced the main rig as a master file that was frequently updated with rigging information by Amir. When Colin, the animator, started blocking out the animation, I could work on the textures and shaders. In order to stay on course, we had regular meetings to discuss our progress, the next steps in the work, and to discuss any current issues that might have arisen.

Supplied with this issue you'll find several video tutorials from Amir (**amirronen.com**). Who generously provides an in-depth look at his rigging workflow.

Prepare textures

Enhance and refine the character

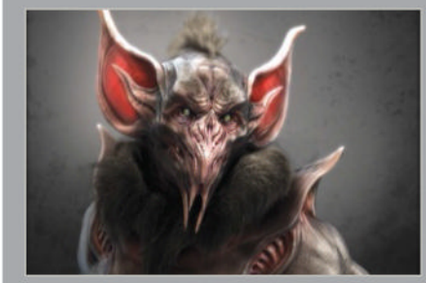


13 Cavity/Convexity maps in MODO Since I was going to texture the actual high-res character mesh, I used Cavity maps as a guide for painting textures. These were baked inside MODO using the Occlusion shader. They also helped to bring back some detail into the Diffuse texture. In MODO I added the Occlusion shader to the Shader Tree and set it to Concavity with a Max Distance of 60cm and a Spread Angle of 45 degrees. I created another Render Output, set it to Diffuse Coefficient and made sure the Diffuse Amount inside the base material was at 100%. The desired texture resolution for the particular object was set inside the MODO Render Properties. Remember, baking these maps in MODO using the Occlusion shader takes some time. With this issue you'll find a step-by-step video guide for baking Cavity maps.

Artist Showcase

Ben Erdt

I'm a professional character artist working at Guerrilla Games on next-gen game characters. I've been fascinated by sci-fi universes and movie creatures since I was a kid. I trained myself in CG art so that I could make my own.



Batty

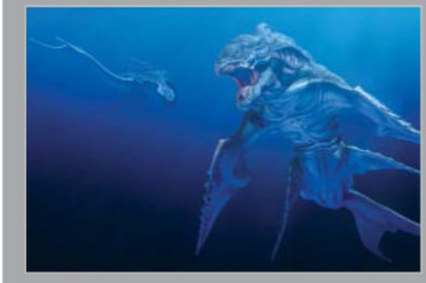
2013, ZBrush, Photoshop

This is the kind of sculpt I do after work or over the weekend. In this case I wanted to sculpt a bat-like creature based on a drawing I did some time ago.

Collector

2011, 3ds Max, ZBrush, MODO, Photoshop

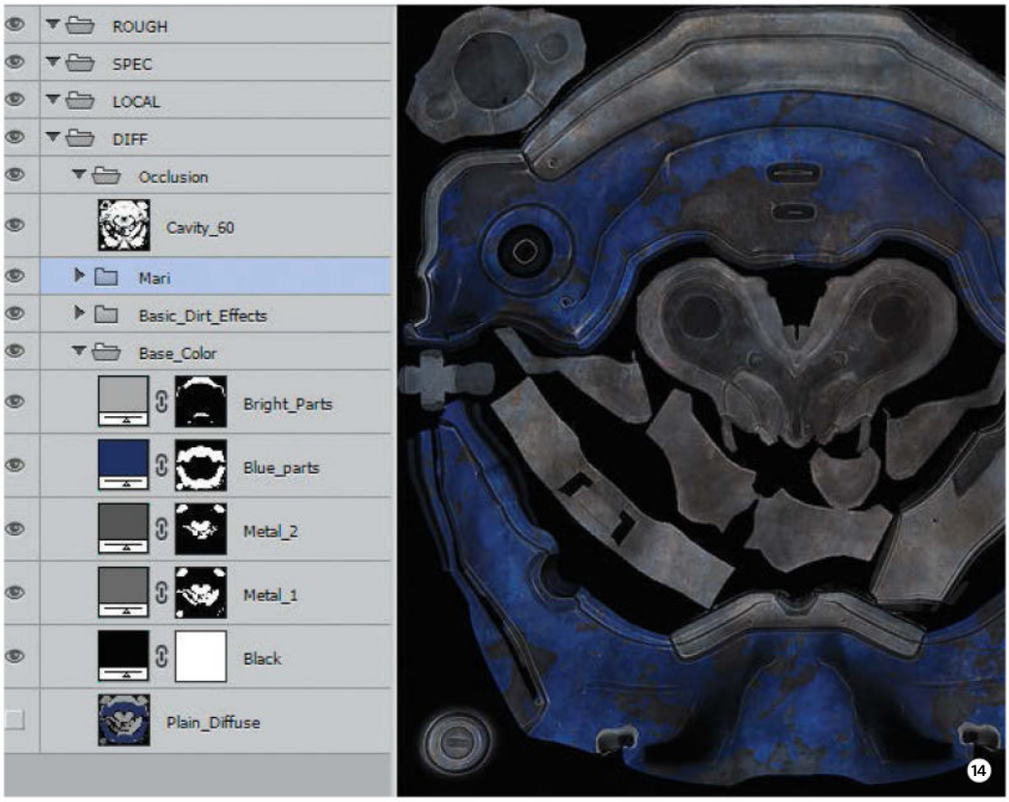
One of the game characters I created for practise. I blocked out the body in ZBrush, modelled the armour in 3ds Max, rigged in Maya and then textured it with Photoshop.



Deep Sea Creature

2012/2013, XSI, ZBrush, MARI, MODO, Photoshop

I wanted to texture the deep-sea creature model that appears in my demo reel. It was modelled in XSI, sculpted in ZBrush, textured in MARI and then unwrapped and rendered in MODO.

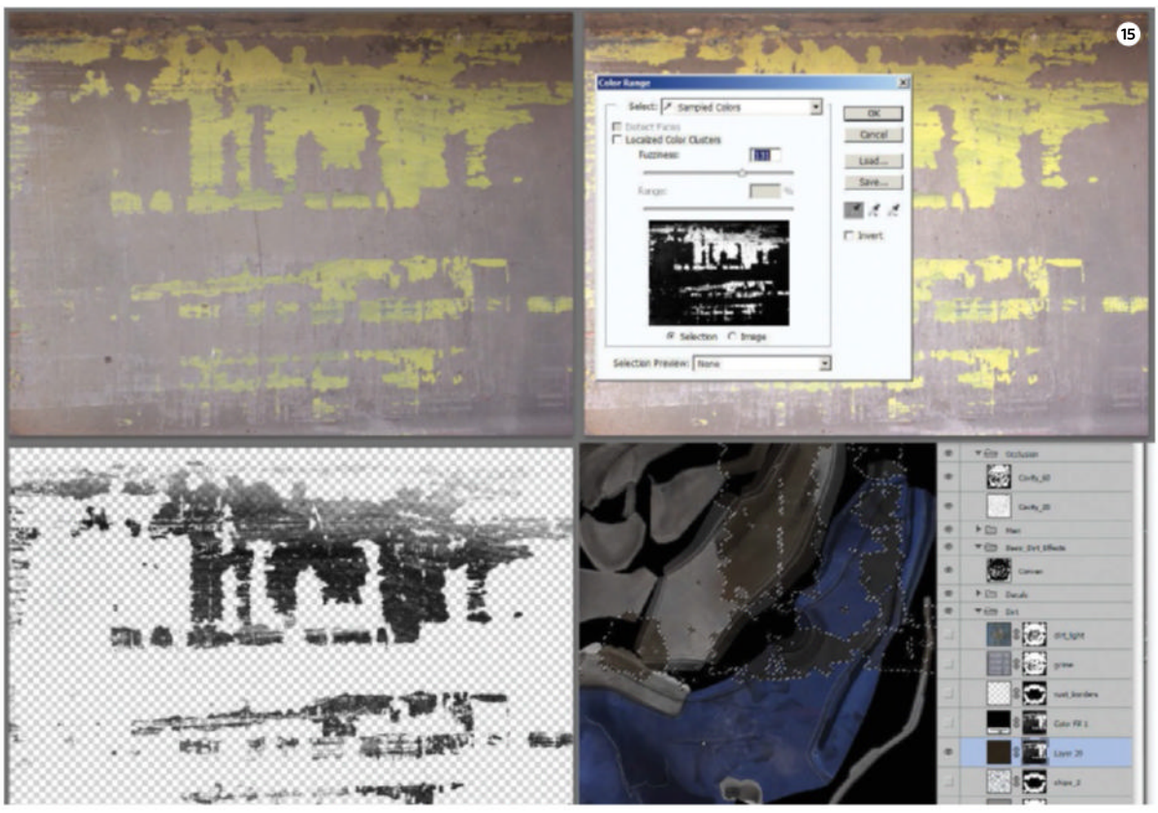


14 Begin authoring textures After unwrapping the entire character model, I ended up with almost 50 sets of four to five textures, so it was important to maintain a consistent workflow. The hidden Plain Diffuse layer was used as a selection guide. The Dirt Effects group slightly broke up the flat colour among all the textures and added overall dirt and grime to the character. The MARI group consisted of object-specific layers that were painted in MARI 1.4, although this workflow was improved thanks to MARI 2's full PSD support. Additionally, to make the final character design easier to read, I made his feet more muddy, while reducing this effect higher up his body. This resulted in a light colour gradient from bottom to top. I also focused more on areas that look worn-out and used in order to add a bit more history to his armour.

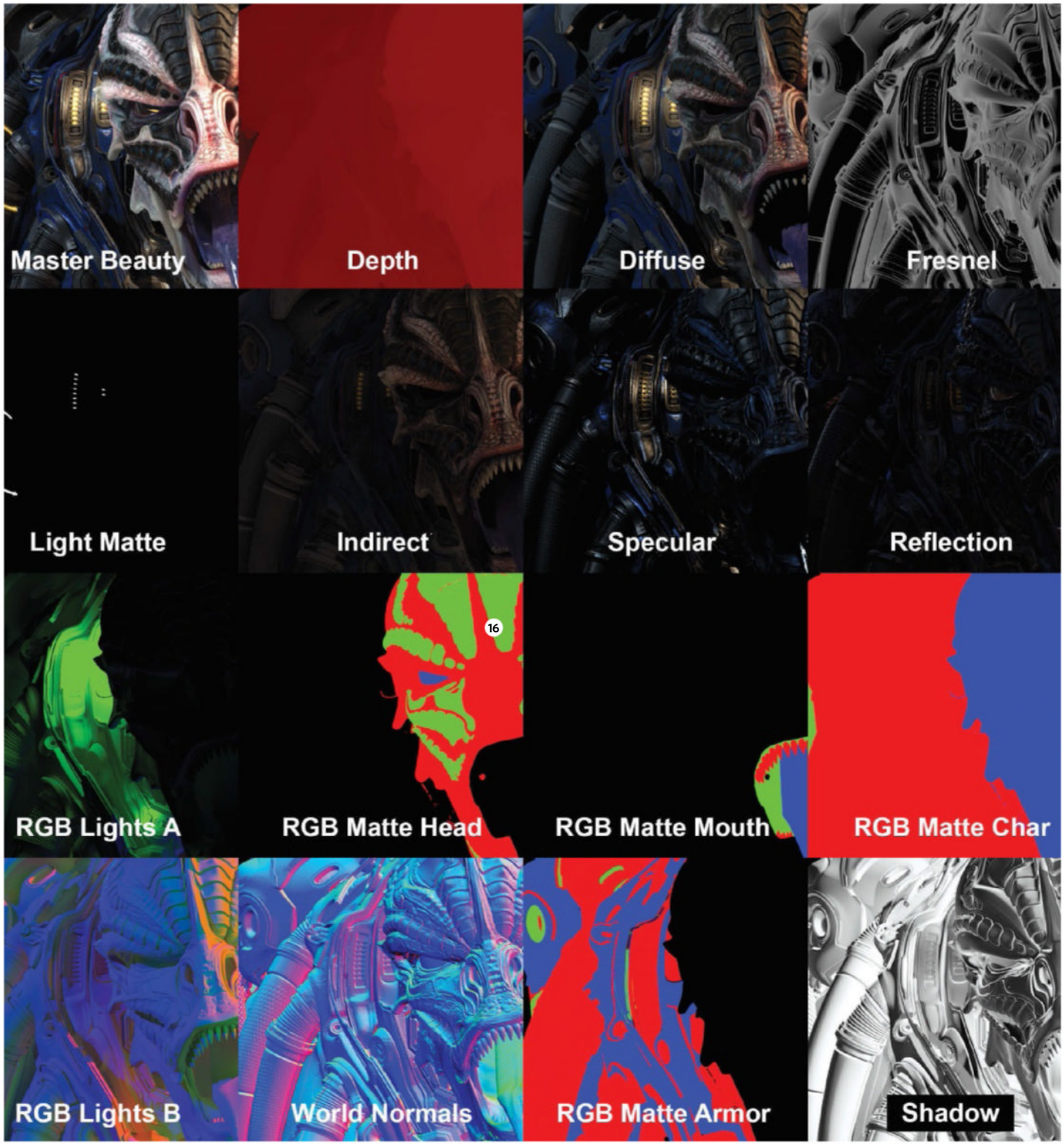
> "Be careful to never lose sight of the original design intent"

Render and post-production

Finish with tiny details and complete render passes



15 Include dirt and paint chips Alongside some hand-painting, I also used photomanipulation for texturing Lukruk – something that increased his sense of believability. A great source for photo textures is **cgtextures.com**. In order to add paint chips to the character, I chose a texture with a high contrast between the paint and the areas where it had faded. I created a selection using Color Range and used it as a mask on a solid colour layer. This enabled more control if I needed to change the hue, saturation or brightness. Back in MODO I then baked an additional Cavity map with a lower range, as well as a Convexity map that was used to emphasise the edges in the roughness texture.



16 Render out passes The screenshot shows the passes that an average shot required. My friend and colleague Andrew Paxson (**andrewpaxson.com**) was in charge of compositing and adding VFX inside NUKE and he did an amazing job. I wanted to give Andrew as much control as possible over the shots, so to give us the opportunity to tweak the blue parts of the body armour, I took the flat colour textures that I baked before texturing and created simple RGB maps. The result was a pass in which R represented the metal types, G represented pieces that could cause potential artefacts and noise, while B represented all the blue parts of the armour. Staying clean and organised like this from the very beginning saved us a lot of time during lighting, rendering and composition. There was one case during the first render test in which I had a bad polygon causing the Subdivision Approximation to crash mental ray. However, because the character model had an elegantly structured hierarchy, the bad piece could be tracked down and quickly fixed.

Final words

Building a complex character such as Lukruk can seem intimidating, but when you break it down and organise it into many simple tasks it will feel much more achievable. Be careful to never lose sight of the original design intent, no matter how challenging the task is. For instance, I could only texture Lukruk by splitting him into 50 textures, but I still made sure that all of those textures were consistent and re-enforced the original design concept.

Render a superhero

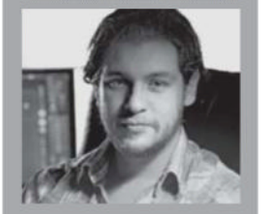
The Sentry 2015

Photoshop ZBrush

There's nothing quite as eye-catching as a classic superhero, but their flowing capes and perfect physique can be hard to master

In this tutorial we will explain in just six steps the methods and techniques we can follow to present our figure in a more attractive way. We will show you in a simple and practical way how we should prepare our model so as to be able to texture it and then export it to our 3D platform for rendering, regardless of our main software. We will learn how to paint it by using masks, how to optimise the amount of polygons, create shaders, light our scene, and finally, touch up our render to generate an attractive and artistic look. You can find the files you need on **filesilo.co.uk/bks-890.**

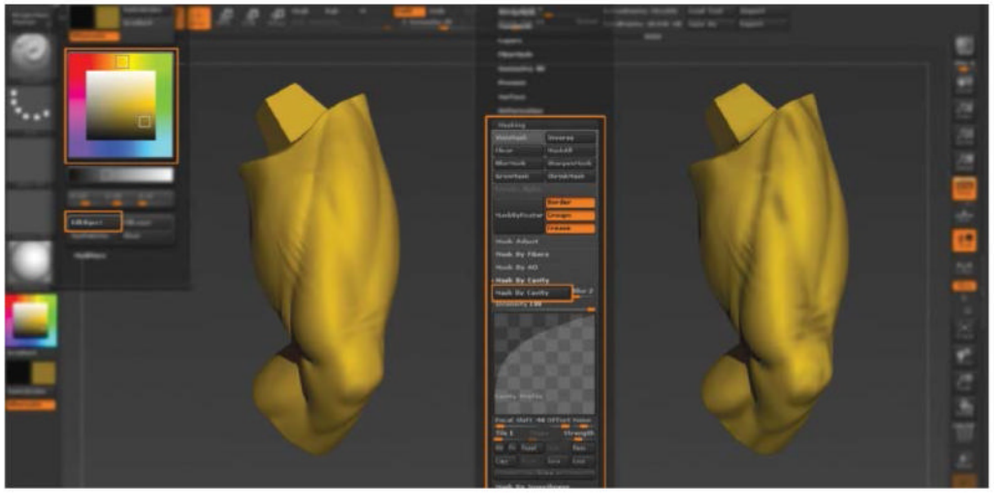
Artist Info



Daniel Bel
Personal portfolio site **www.artstation.com/artist/danibel**
Country **Argentina**
Software used **ZBrush, Photoshop**
Daniel worked for Raybite, ArchPartners, Gameloft and Plenty. He's now Art Director and co-founder at Waypoint Studios.

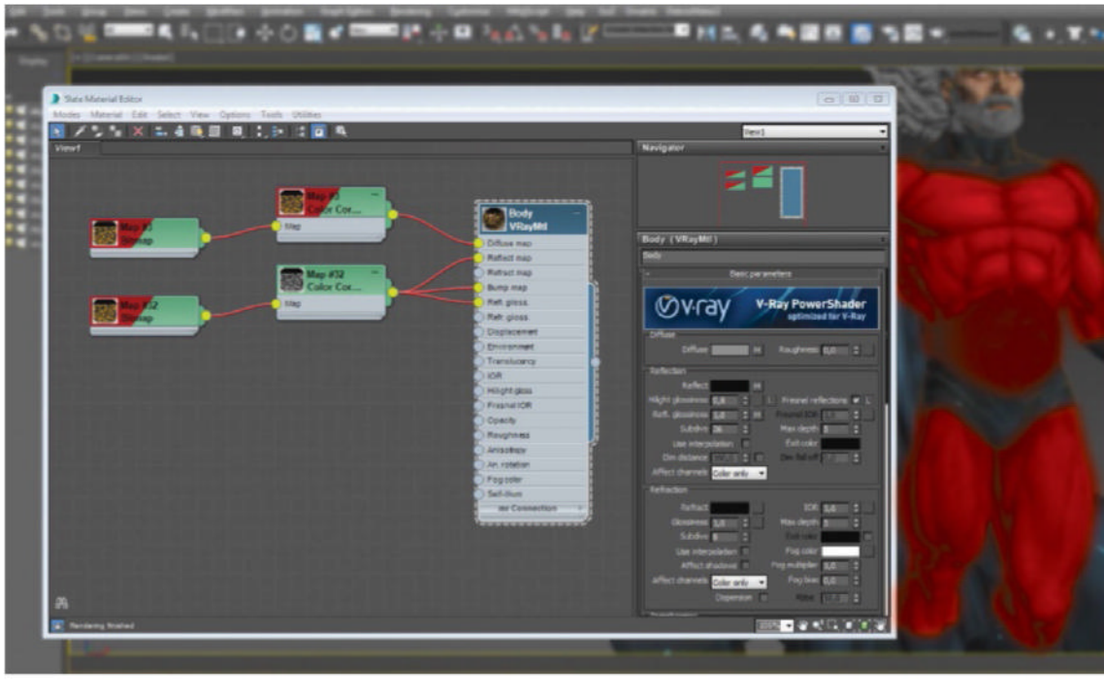
01 Prepare your model Before starting to paint our model, we should generate the mapping coordinates of each of the parts that conform our figure. Although this process can also be made after painting the model, it is advisable to do it before so that when we're exporting each texture map, we can check or modify as and when we want over the unfolded UV. To do this, we can use the tool UV Master from the menu ZPlugin, simply by clicking the Unwrap button. Besides mapping coordinates, it is convenient to keep our figure clean and tidy. To do this, we can group different parts of the model using the Merge button in the SubTools panel, for example for everything containing the same colour or material. Likewise, we can use the function Polygroups with the same purpose.

02 Paint with Polypaint To create all the textures of this figure we used the Polypaint tool, which is simple and practical to use. To do this, first choose a base colour from the colour selector, for example yellow or red for the suit. Then, go to the Color menu and click on Fill Object to colour the entire object at once. To add details in certain areas, use the 'Mask by Cavity' tool from the Masking palette. After applying the mask, click on Fill Object (with another colour) in order to colour the masked areas and, thus, the rest of the pieces. We can also do some touch-ups with standard brushes.



03 **Exporting to 3ds Max** Before exporting the figure to our software, we will perform some actions to optimise the number of polygons of our model, so as to be able to manipulate it better after importing. For that, we go to the ZPlugin menu and then to Decimation Master. We tick the Keep UVs option and then we click the Pre-process All button. Once this process is complete, we select Decimate All. Usually, a 20 per cent decimation quality works fine, but let's try different values until we are satisfied with the amount of polys. Having done all this and with our model now optimised, we go to the Tools menu and click the All button to export all of our SubTools.

04 **Create materials** Once we have the model imported into our 3D platform, in this case 3ds Max, let's assign materials to each part. The materials that were used in this model were very simple with only a few variations among them, just to differentiate the plastic, metal, matte and glossy parts of the figure. We create a VRayMtl in our Material Editor. Then, we load the diffuse textures previously created in ZBrush, and we adjust and play a little with the grey values and colours of reflection, glossiness reflection, highlight glossiness, Falloff IOR and number of subdivisions in order to achieve good quality materials.



05 Add some lights Now that we have our model materialised, we will suggest a point of view that interests us, and then place a camera so as not to lose the frame. Once this is done, we use VrayLights to light our scene. For this piece we used a rather classic set with a few changes: the well-known three-point lighting process. To do this, we place a strong and cold light on the back of the figure, which will serve us as a rim light. Then, we add another one on the right front, but this time with a soft warm light that will give us some light on the front. Finally, we place a warm and a bit more powerful light on the left as a filler. Now just render!

Important tips

If we are to use our model for rendering, it is important to export our maps in a nice resolution (4K at least), because even if we don't know how close the camera is going to be, we'll still be covered in this way. As a general lighting tip, it is important to know the role of each of the lights we have in the scene, that is to say, we'll avoid adding lights just for the sake of it. This is because it will cause our render to take longer and make us lose control of what we want to convey when we are lighting our figure.

06 Postproduction Finally we get to postproduction, which is the final stage of every render. In this case our image is a still, so we used the image editing software Photoshop and an additional plugin for it named ArionFX. To work more comfortably and have a much higher dynamic range when editing the image, we saved the render in EXR 32-bit format. Depending on the type of the image, we will use the tone-mapping options from ArionFX and this can include ISO film, Midtones, Saturation, Whitepoint, Compression, Details, Radio, Threshold and Base. We will use them for toning our render and to give it our own personal artistic touch.

Learn how to

- ☑ Create a base for sculpting using ZBrush primitives and DynaMesh options
- ☑ Build up forms using simple brush combinations
- ☑ Pose a character using Transpose Master
- ☑ Build up the forms further
- ☑ Apply texture and detail
- ☑ Tackle composition
- ☑ Render for presentation
- ☑ Use rendered layers
- ☑ Finish with post-production

Concept

The aim of this tutorial is to create a fantasy satyr-type character. I want to create an overly stylised face for a fantasy genre that can be rendered realistically and create impact.

Design a Weta character

The Satyr 2012

Photoshop ZBrush

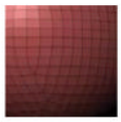
Learn to use ZBrush to create a fantasy character portrait, following the principles of Andrew's 3D character conceptualising workflow at Weta Workshop

A bust or portrait is always a great place to start visualising a character. ZBrush enables us to conceptualise an idea to an extremely high level relatively quickly as well. We no longer have to go through an arduous technical process to create an effective, realistic-looking 3D character.

Without getting too focused on the technical aspects in the 3D process, I'd like to show how I generally start conceptualising a character by creating a bust and portrait. This is where I begin the conceptual stage of my project. You can find all the tutorial files that you will need at **filesilo.co.uk/bks-890**.

Artist Info

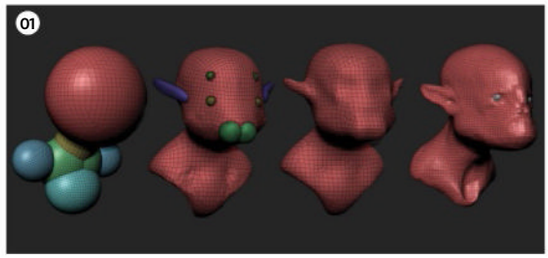
Andrew Baker
Personal portfolio site **www.andbakerdesigns.blogspot.co.nz**
Country **New Zealand**
Software used **ZBrush, Photoshop**
Creating and conceptualising characters and creatures for physical and digital pipelines

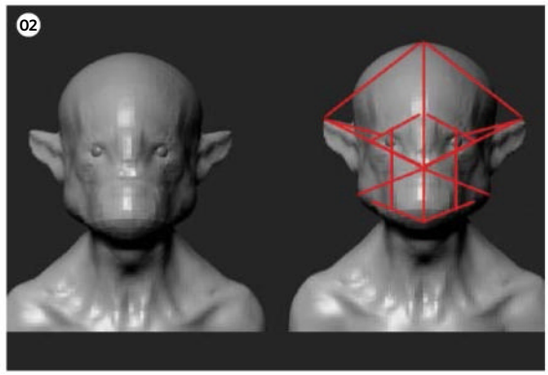


Conceptualise with digital clay

Get started on the sculpture in ZBrush

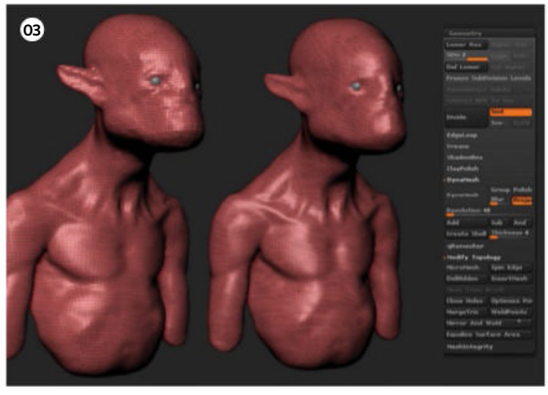
01 Use primitives to establish a base Traditionally, it used to be quicker to start a 3D sculpture from a base mesh you had already created. I've always found this process a bit limiting on a conceptual level, though, as you are technically pushing and pulling a volumetric shape – it feels constraining. All of my design sculpting now starts from a sphere. With the use of Insert Mesh brushes and DynaMesh I can experiment with different shapes before locking into the base I'll use to finish the sculpture on. Once I've got enough primitives there to manipulate, I use DynaMesh at a low level of 48 and start sculpting.





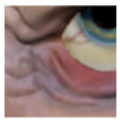
02 Design considerations I create several lines to highlight relationships on the face. The ears line up with the eyes to the point of the nose and from the nose outwards to the edges of his jaw. I generally think of character faces in triangles that are largely based on humanoid configurations. This can be pushed as far as you like – for example huge noses, tiny eyes, massive chins. It's a game of consideration. Be aware of what's working and what isn't. This will be the design base for the following steps.

03 The right geometry With this sculpture we're trying to be fast, but effective. My goal is not to create a production model; however, ZBrush still enables you to create a high-res sculpt really quickly, so it's worth having enough geometry to get you there. I find it's essential to get as much information in the lowest subdivision level before subdividing, so that I won't need DynaMesh again. I keep design elements like horns and eyes on a separate SubTool to move them independently if I need to. I subdivide twice at this stage to begin sculpting further.



Using DynaMesh wisely

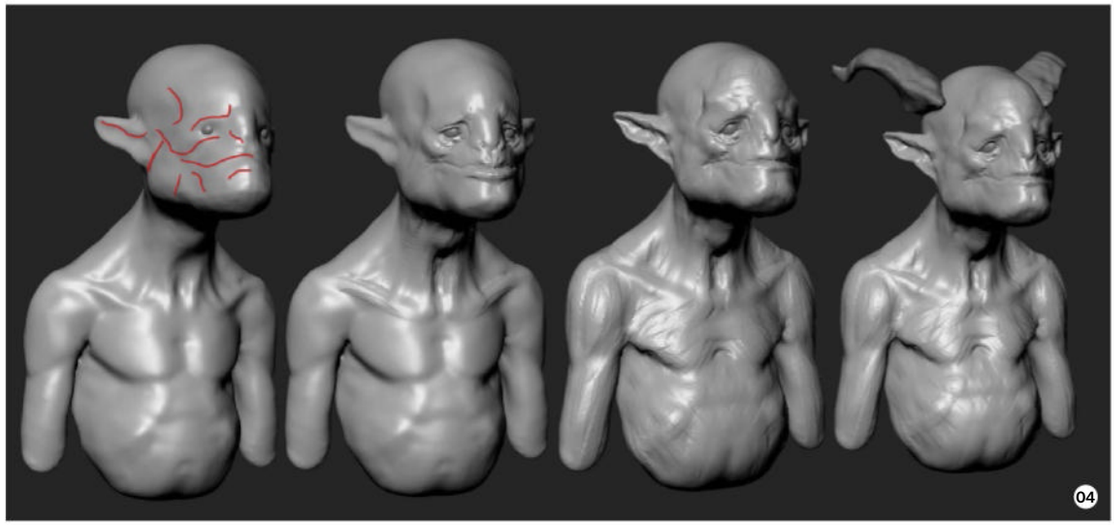
I start using DynaMesh on a very low level. In this case I have it set to 48, but depending on how large your model is the resolution will differ. At the early stages it's almost like what you do with sketching: blurring your eyes to start visualising where the forms are, and quickly laying down broad strokes to find the design. DynaMesh is extremely useful at this stage and can be used in the entire sculpting process. However, I prefer to use it as a base generator and subdivide further. Later I want to be able to drastically pose this character, so having a lower subdivision level helps with this.

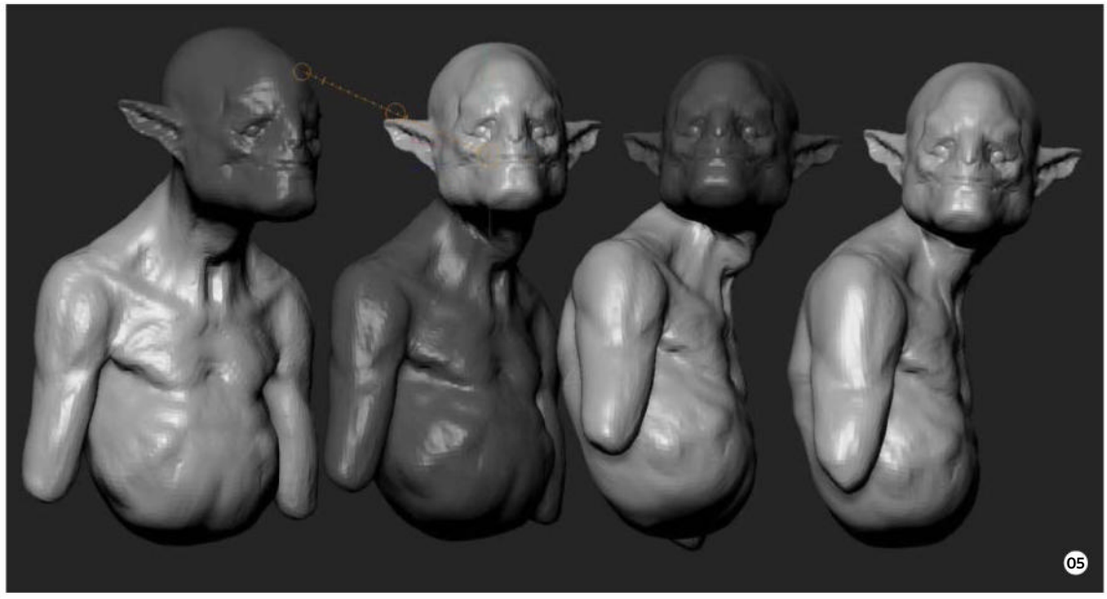


Form, texture and pose

Let's get the character into pose and refine the sculpt

04 Build the forms Now, with some extra subdivision levels, I build up some of the forms. Using the Clay Buildup brush I want to create direction for the surface and build up some secondary forms. Doing this on one of the lower subdivision levels can create some nice organic effects on the upper levels. I often switch between the lower and higher subdivisions at this stage to play with the options a little. I want to create a drastic pose for this character, looking over his shoulder, so I don't want to get too precious about any forms at this stage, but rather block out the basis for his personality.



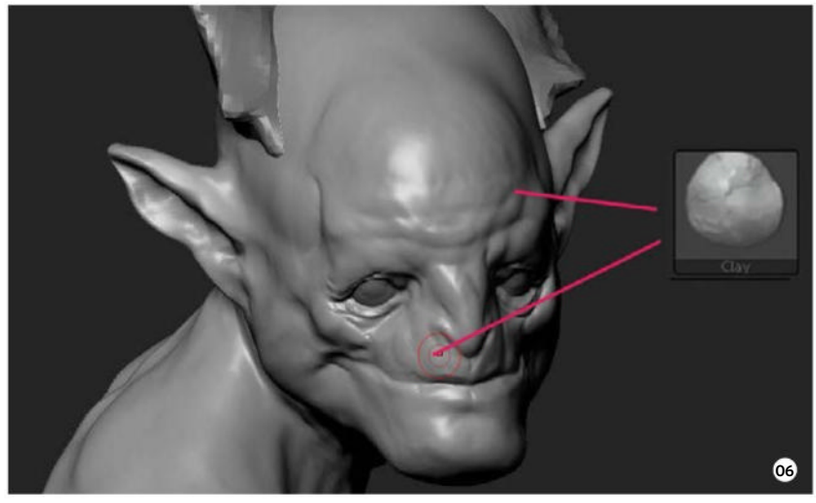


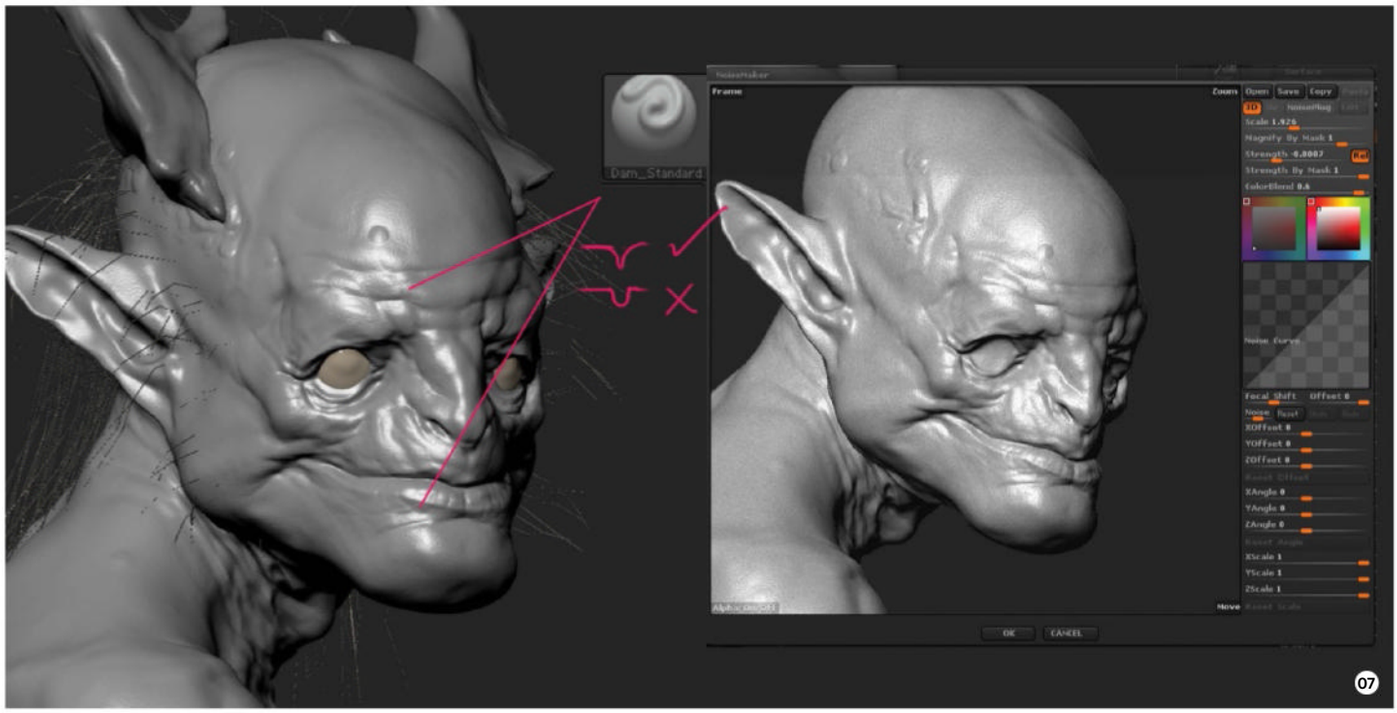
Top shaders

Using different shaders is a great way to tackle certain aspects of your sculpting and colouration. For my primary forms, I prefer to use a shader like MatCap Grey, which shows the forms off really well. When I start my secondary forms, I turn on the Blinn shader, as this has a nice general specular highlight, which is also good for showing the detail. I flick between that and MatCap Grey. The Skin Shader default is awesome for colouring flesh-toned characters, and I use this a lot for my concepts as it displays really well.

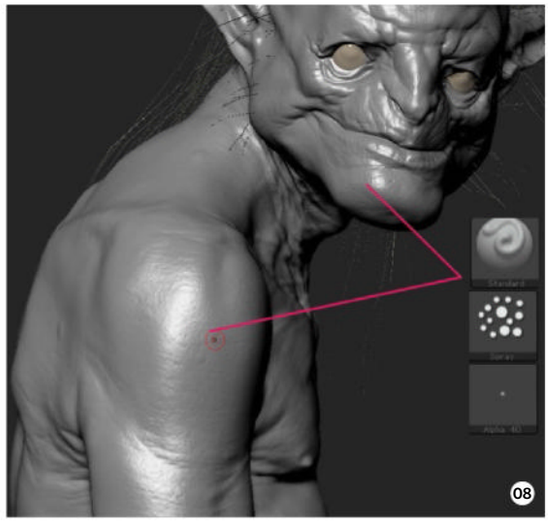
05 Put the character into a pose As our end goal is not a symmetrical production model, I want to pose it right away. I have a clear idea of how I'd like to present this character, having him look over his shoulder to create an asymmetrical bust and an interesting view for the portrait. I use Transpose Master to generate the pose. Be as bold as you can! It's important not to marry to any forms at this stage and let it come out in the posed maquette. I also sculpt into the mesh while transposing, trying to fix any broken anatomy as I go.

06 Tighten up the forms Now that the model is posed and I have some higher subdivision levels, it's about refining those secondary forms, like the cheekbones, lips, brows, eye sockets and so on. For me, there's no better brush than the Clay for this. It creates very nice crease lines, which can start as the base for our wrinkles. I find the Clay brush, if treated right, can give some nice results to the higher subdivision levels, using the Smooth brush to soften where needed. I also play with the shape of the horns, considering how they affect the overall silhouette more, now they're on the posed character.





07 Detail and texture I am now happy with the secondary forms and can start to see where my detail needs to go. DamStandard is my new favourite brush for going into these soft forms and giving them some sharpness. They fold into the surface and create a pinched, V-shaped crease, instead of a U-shaped crease like the normal Standard brush makes. I also add a noise pass to create the pore effect on the surface. Playing around with the scale and intensity of the noise function can create awesome pore- and skin-like textures. Experiment with this feature to really get a grasp of just what it can achieve.



08 Pores and extra texture To create another level of focused noise in areas, I use the Standard brush with a Scatter effect and a very small Point Alpha. I turn the Z Intensity slider quite low and increase the size of the brush and intensity as needed, especially on the shoulder and chin areas or anywhere I think a specular highlight might appear on the final piece. I also use DamStandard with a really low intensity to create very fine wrinkles, going in the direction of the skin compression.

09 Add some colour As colour will greatly affect how our texture is shown, I want to start adding that in, treating the detail of the surface and colour now at the same time. I start off by adding a very light base colour, covering the whole model. I use the default skin shader as this shows up colouring for skin very well – and all in real-time. I layer up the model with reds, blues and yellows for the underlying blood vessels to wash with a flesh colour and soften in areas. I also mask out the cavities to add some dirt.

10 Refine detail with colour Because ZBrush enables us to affect the form while adding colour, I go back to my DamStandard brush, turn the RGB down very low with a brown colour and start to tighten up some of the wrinkle details. I also use the Inflate brush to push all the details tighter together.

Final touches and presentation

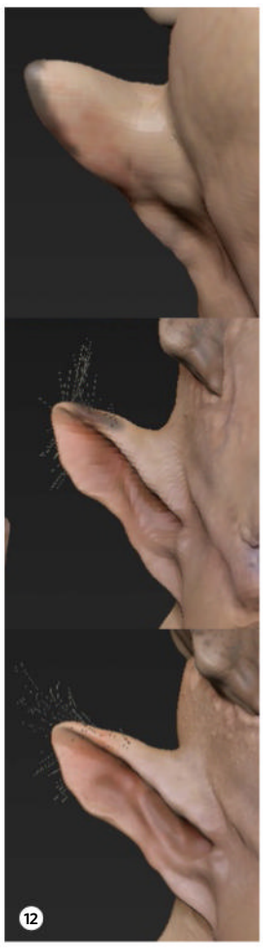
Finish the painted sculpt and get it ready for maquette presentation

11 Add the hair

Another hugely innovative tool from ZBrush is FiberMesh. This is a great addition to the process as things like hair really add a nice touch to a character like this. By simply masking off areas where I want there to be hair, I turn on the FiberMesh button and begin to adjust to the different hair I'd like to add. I want some variation in the hair around him, but I want it to be quite thin, sparse and wiry.

12 Get creative

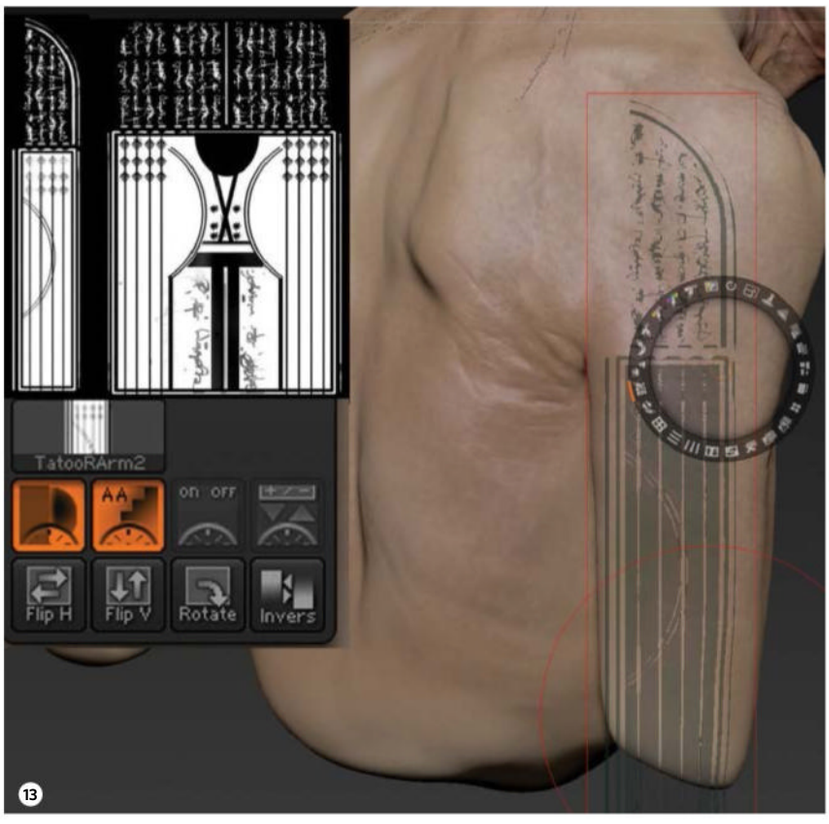
Without going too far and crashing your machine, you can have a lot of fun creating different hair around the face. Masking areas like the tips of the ears is a nice touch, I find, while creating some scraggly sideburns can also be effective. There are lots of options to play with, so I suggest spending some time to get used to what's possible. I always take time to manipulate with the brushes afterwards, so I can be sure to create a much more effective look.

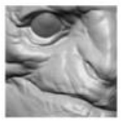


13 Give him some ink I want to add another element to this character that isn't necessarily a costume accessory. I'm thinking of a large religious-style tattoo on his back. I create the tattoo in Photoshop as a flat template then use Spotlight in ZBrush to project it onto my character. Spotlight is another great way to project any other further texture onto characters.

Paint-over tips & tricks

Depending on how long I have to get an image done, I sometimes spend a bit of time playing with the hair and positioning tattoos. These are often things that can be explored in 2D for conceptual pieces, but it never hurts to have something 3D there for the final render. All of what's been done so far has been done very quickly without getting too consumed with technical aspects. If it's not working in 3D, solve the idea quickly in 2D by doing paint-overs before committing to the 3D render. This can also be really handy to show a client for variations.





Compose the final image

Render and capture the essence of the sculpture in post

14 A perfect comp Having the composition in mind from the beginning will certainly help you get to this stage quickly. This way there's no unnecessary sculpting and the entire process is geared towards aiding what we want to show. I aim to create an interesting pose that isn't front-on to the character, thereby enhancing his silhouette a little. Having the sculpt turned to a grey shader (Blinn, in this case) and doing some quick BPR renders with the main light source will also help us judge how best to compose the character. I create my document in portrait at about 1,310 x 2,050 pixels, which will be the final crop.

15 Render out layers for post Once I've established my main light source, and the shadow that is created by looking at the BPR render passes, I start to look at what else I can take to Photoshop to help this image along. I render out a lot of different light passes on the various standard shaders turned to black. I use the BPR render passes, a cavity and reflection pass. For SSS I use a standard shader set to red and amp up the ambience. Then I just need any shader that looks like it might do something interesting in Photoshop.


15


14

Layering your shaders

It's vital to experiment with different shaders and effects in ZBrush. There's no limit to the variation of materials and textures you can create in ZBrush without the use of photos or alphas. Designing and creating characters in 3D and getting realistic results doesn't have to be a laborious process anymore. Also, keeping a library of references will always aid the creative process and arm you with a catalogue of ideas.


16

16 The final composition I generally experiment a lot with blending options on the passes I've rendered out. Because this guy has human skin and I've painted the model, the initial render gave me a lot to work with. This is the great thing about this process and leaves us a bit of time to spruce up the image. Using the Z-Depth map and changing the colour while turning it to Overlay can create some nice depth effects. Reflection and Light maps can be used to create interesting effects for the eyes, too. At this stage, be experimental and have fun.


17

17 Post-production Once I'm happy with the blended layers, and they're all doing what I want, I can really start to have some fun. A background can be used to make the image look more of a studio shot or something more photographic. As this image could be used as the base for many design passes, I'm not shy about painting over areas that need further attention – even using photographs – although I only ever use photos to add noise or textures where I can. Sometimes it's unavoidable, but if I'm sculpting a character like this, there's really no need.

Render a cyberpunk character

Pep Rally 2015

Photoshop ZBrush

Model, texture and light a high school student from start to finish for a futuristic cyberpunk world

Today, we're going to learn how to create a rebellious cyberpunk teenager from the not-so-distant future. The inspiration for this character came from a love of sci-fi and nostalgia for high school sports culture. The mixing of genres is a great way to explore new avenues for design. In this tutorial, you'll learn how to take an image from 2D sketch to a fully realised piece. We will accomplish this with a variety of tools including ZBrush, 3ds Max, Marvelous Designer, Photoshop and KeyShot 5.

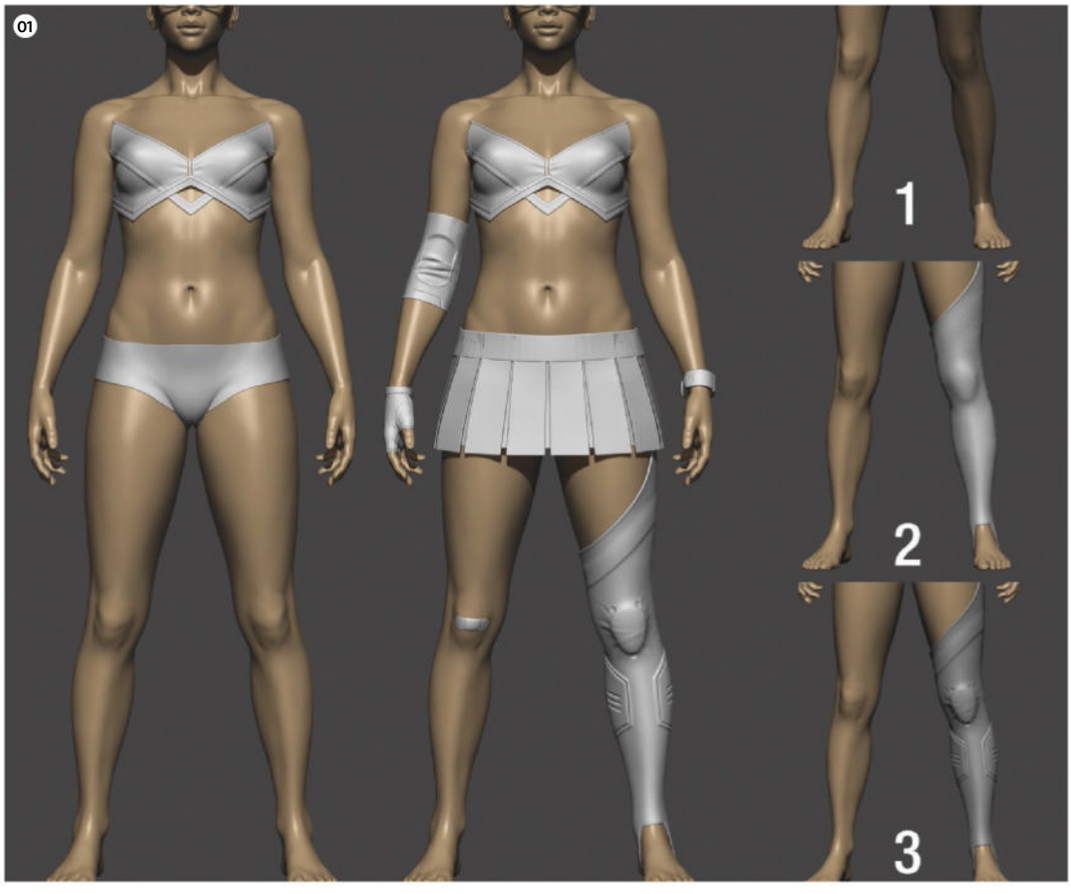
Whether you're an interested hobbyist, or an industry pro looking to learn a few new tricks, this step by step will show you how to take your work to the next level. Download all the tutorial files that you'll need at **filesilo.co.uk/bks-890**.

Artist Info

Damon Woods
Personal portfolio site
www.dkwoods.carbonmade.com
Country **USA**
Software used **ZBrush, 3ds Max, Marvelous Designer, Photoshop, KeyShot 5**

Work your way outwards

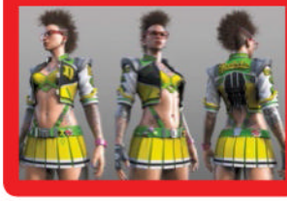
Create the skin-tight accessories first



01 Start at the basics In building up a character, it's effective to start at the most skin-tight items and work your way outwards. This helps us build a well-fitting outfit and helps reduce geopenetration issues down the road. The skin-tight accessories were created by masking out the shape of the clothing on the body and then using extraction. The skirt and glasses were created in 3ds Max.

Concept

The first step as part of any workflow is having a concept. I start by sketching out my character, making sure that the details and forms are clear. This saves a lot of time down the road.



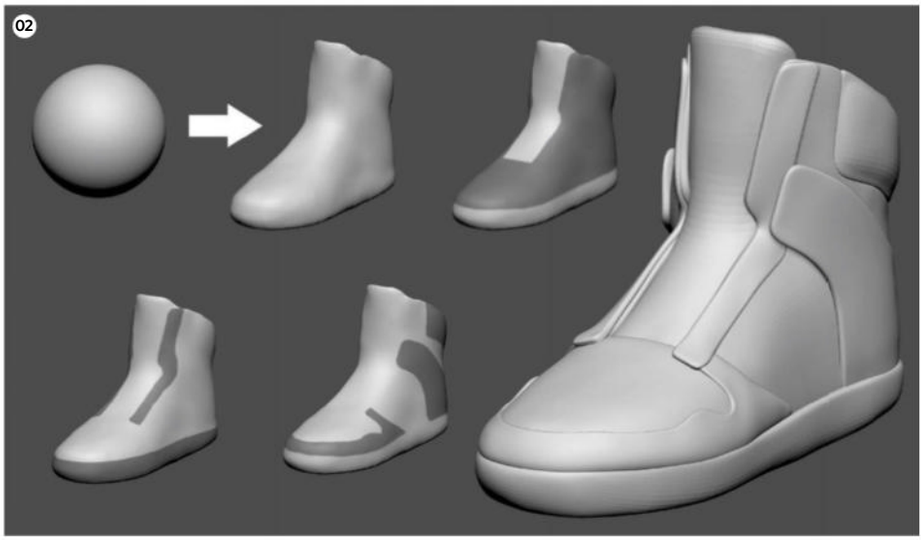
Render a cyberpunk character

Learn how to

- ☑ Design a visually interesting character
- ☑ Block in details from large to small
- ☑ Use the Insert Multi Mesh and Curve brushes to your advantage
- ☑ Create realistic cloth folds with Marvelous Designer
- ☑ Use techniques for creating hair, eyebrows and eyelashes quickly in ZBrush
- ☑ Create skin details
- ☑ Get great results with KeyShot shaders
- ☑ Learn tricks for setting up good-looking lighting scenes up in KeyShot
- ☑ Set a camera in KeyShot
- ☑ Find the best render settings for KeyShot

Clothe your character

Sculpt believable folds with the cloth sim Marvelous Designer

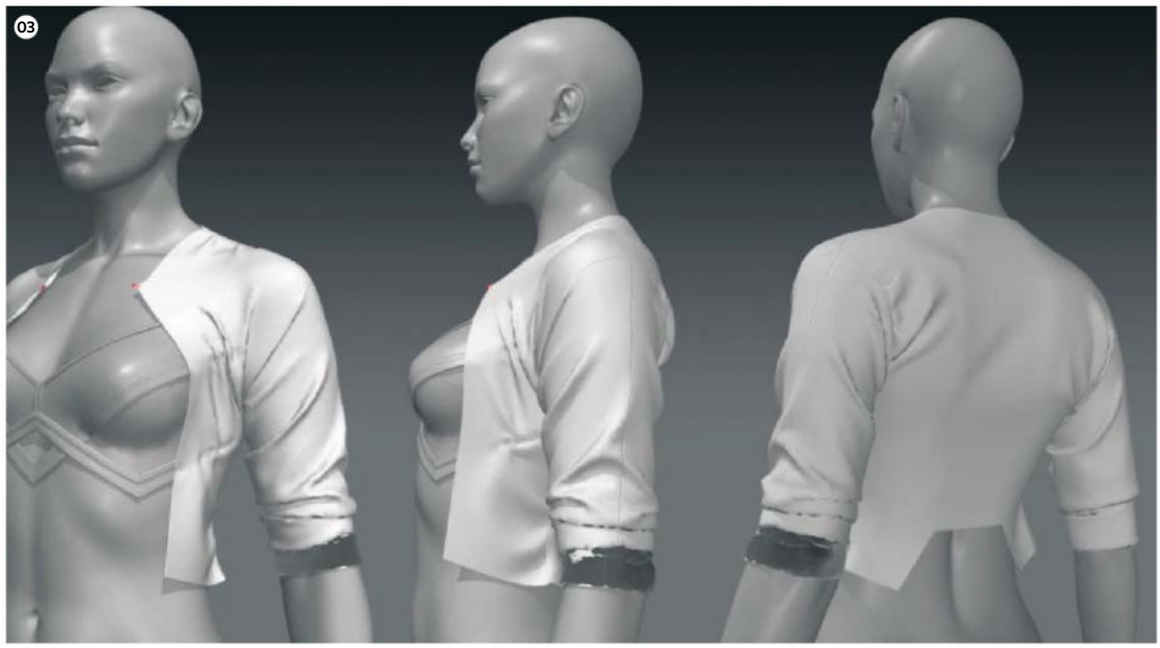


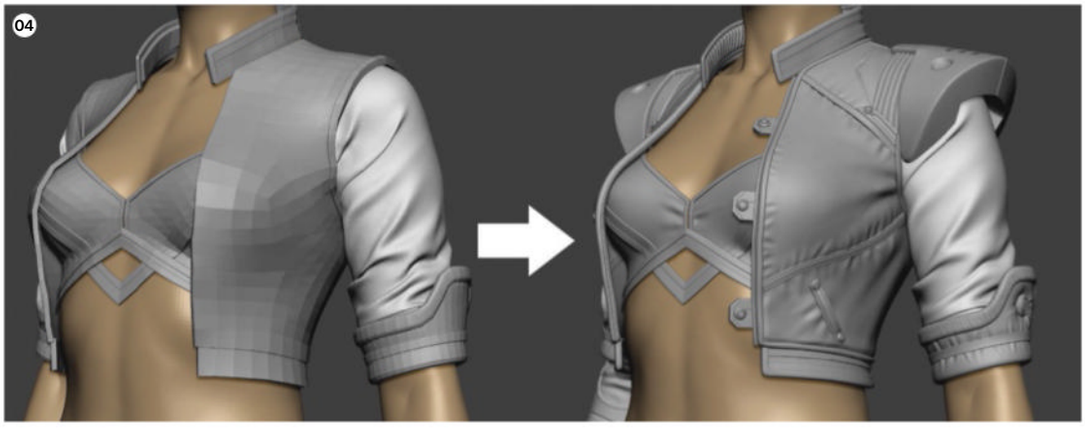
02 Shape the shoes Trainers, like most footwear, are simply a compilation of flat leather shapes. To make the shoes, use a DynaMeshed sphere and shape it around the foot. Then subdivide it a few times and create the different leather patches that make up the pattern of the shoe using the same mask and extract method as Step 1. Feel free to use real-life trainers as reference.

Size matters

When starting a project, pay attention to the real-world scale of your character. In 3ds Max or Maya, use the measuring tools to make sure your character is a realistic height. Programs like Marvelous Designer and KeyShot use real-world scale to calculate things like gravity and thickness. If your character is 70 feet tall or the size of an ant, it will have an adverse effect on your final results.

03 Use sim to create cloth We want the jacket to have some nice realistic folds on the sleeves. A talented artist could probably sculpt some pretty believable folds, but they will never be able to match the speed and accuracy that a cloth sim program can provide. Using Marvelous Designer, we can create this jacket with a few well-placed shapes. At this point, you don't need to nail every single wrinkle. We just need a good foundation to start on. When you're all done, make sure to set your particle distance down to around 3. Then, export it as an OBJ to bring back into ZBrush.





04 Touch up the cloth Now that you have a solid base to work on from Marvelous Designer, go in and add the smaller wrinkles and irregularities to the mesh that we see in everyday life. Once again reference is key. Pay close attention to the way the cloth buckles and ripples around seam lines. Pay attention to the natural direction that the sim cloth flows and add additional folds in places that look a bit bare. The collar, straps and other pieces were created with the CurveStrapSnap brush and touched up in 3ds Max.

05 Add seams and stitches

To add stitches, create a custom Curve brush with a simple piece of geo to repeat. Making sure that Curves mode is on, start adding your stitches to the areas around the edges of your clothing and anywhere that patches are joined. As an additional detail, use the Dam_Standard brush to slightly indent the path of the stitches. To create the seams on the jacket, use the CurveStrapSnap brush.

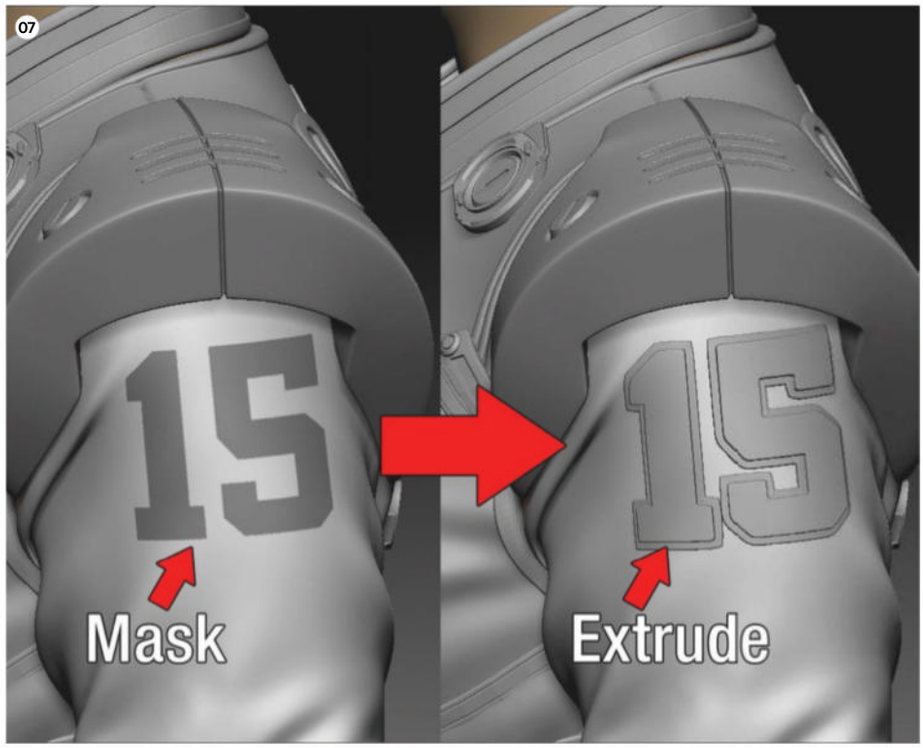
06 Add nuts and bolts

To add the nuts and bolts that give our character a better sci-fi feel, we will use the IMM (Insert Multi Mesh) Brushes. Select the IMM_ ModelKit brush and then hit M on your keyboard. This will pull up all of the various shapes and objects for you to choose from. To add the shape, simple click and drag on the object.

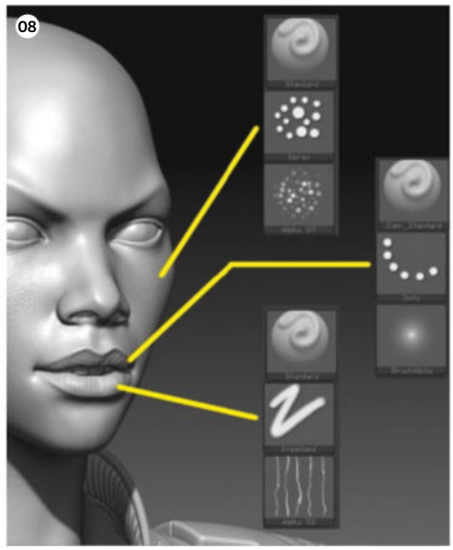
> “The skin-tight accessories were created by masking out the shape of the clothing on the body and then using extraction”

Add extra details

Be precise and have plenty of references

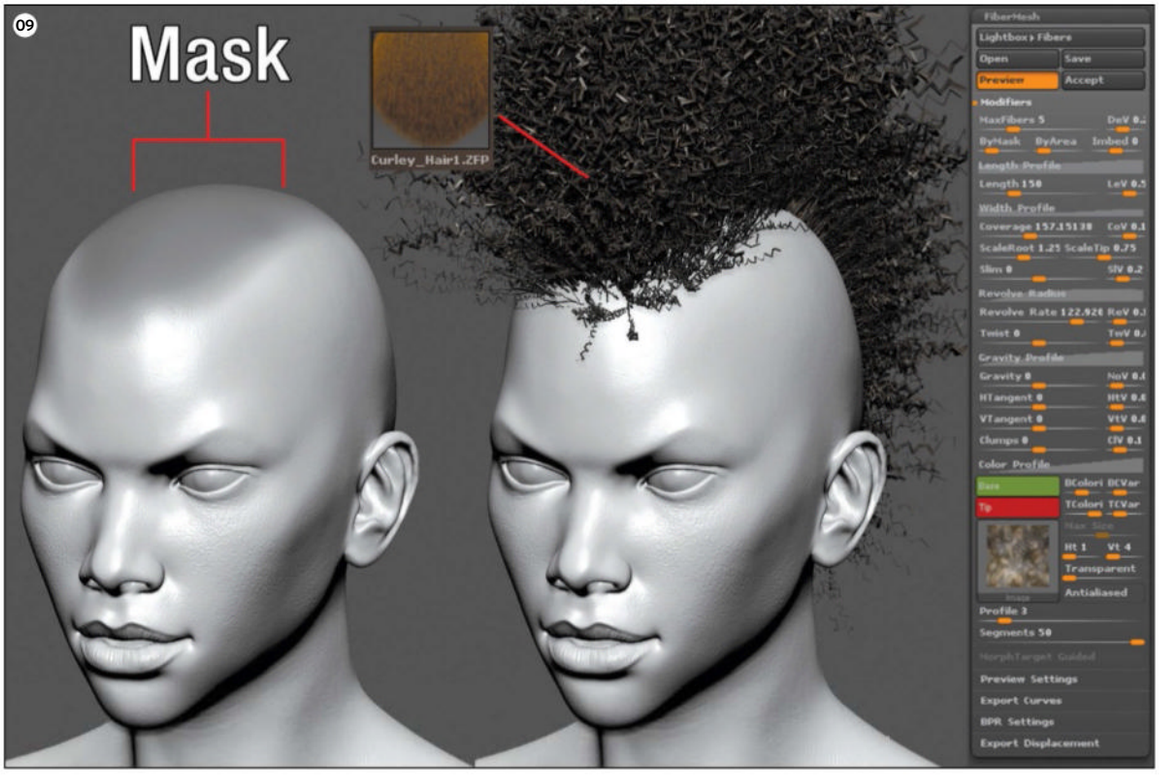


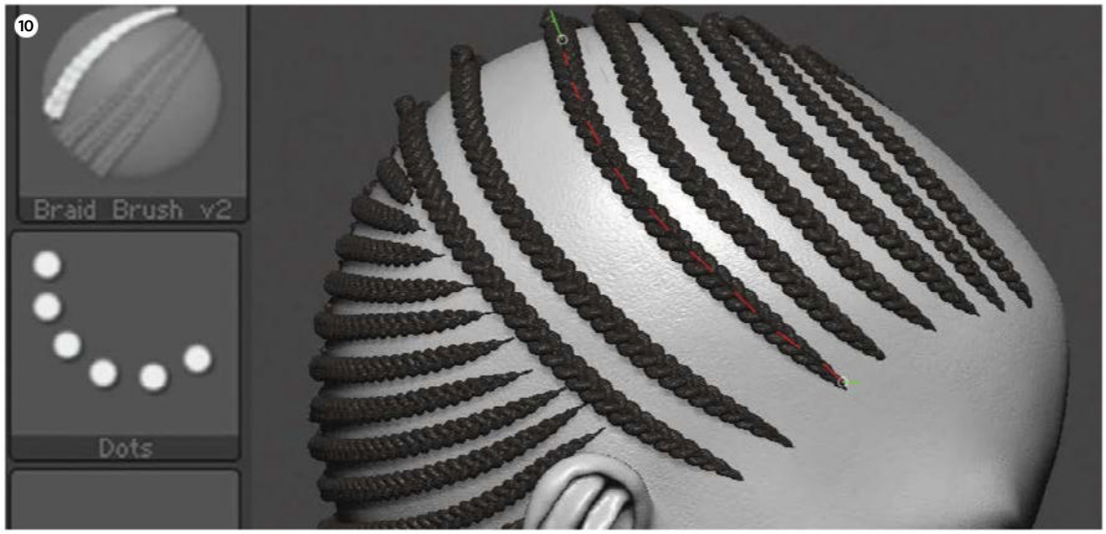
07 Create the patches Our hero is an accomplished athlete and she's not shy about it. To adorn her with her various patches, we first created some custom Alphas in Photoshop. Then we import them into the Alpha palette and do a mask extract like before. These meshes can get pretty heavy, so we suggest hitting them with ZRemesher.



08 Facial details Adding details to the face needs to be very precise. Make sure you have plenty of reference that matches the type of character that we want to convey. Sculpt what you see and not what you know. Reference is key in creating a believable piece. In this case, our character is high school age with attractive features. Alpha 07, with Spray mode on and at an intensity of around 6, is ideal for adding skin pores. Pay close attention to your reference to see what size, direction, and depth the pores are going in. Use Alpha 58 with Stroke mode on to create the subtle lines under the eyes and on the lips.

09 Create hair To create the curly 'frohawk', simply mask the area along the top of her head and go to the Fibers tab in Lightbox. Select Curley_Hair1.ZFP. From there, go into the FiberMesh tab and hit Preview. From here, you can adjust all of the parameters of the hair. You can see the settings that were used for this piece. Once you're satisfied, hit Accept. The eyebrows were created the same way. Just mask off the eyebrow shape, use a straighter hairstyle like Fibers160.ZFP and lower the length and fibre count accordingly.





10 Add the braids The braids were created using a custom Curve brush graciously donated to the ZBrush community by Tetsuo Oshima. Draw the braids across the head one at a time and adjust with the Move brush. By nature, the Curve brush will add the braids to the same SubTool that you are drawing on. A quick way to separate them is to clear your masks, then Cmd/Ctrl+Shift+click the head to isolate it. Mask the head completely and then Cmd/Ctrl+Shift+click in a blank space to unhide everything. Now with the head masked off from the braids go to Subtool>Split>Split Masked Points.

> “Just like in the modelling phase, we first want to block in all of the colours with flat colours. Use the Color tab to do a fill”

11 Block it all in Just like in the modelling phase, we first want to block in all of the colours with flat colours. To do a fill, go to the Color tab at the top of your screen and hit FillObject. Make sure that Mrgb is selected and use a basic material for now. The school colours for her are green, black and gold. Using lots of reference of athletic apparel, we can get a feel for how to approach things. The goal is to make her outfit read as a high school uniform, no matter what time period it is set in. The clothes would be clean, colourful and well maintained with different types of materials mixed in.

12 Texture the skin Using the same skin colour that we used as the fill, select Alpha 7 with Spray mode turned on. Make sure to turn off Zadd and Zsub so you aren't sculpting while you paint. Now lightly brush across the surface to add some irregularity to her skin tone. You can also go back in and add smaller things like birthmarks and acne scars. Remember, nobody is perfect and small skin irregularities really help add realism to your character's skin texture. To add the tattoos, images were turned into Alphas and added with Drag mode. Use a dark green colour instead of pure black to give the tattoos a more realistic tone.

Add eyelashes

Everyone has eyelashes, but not every artist remembers to add them. The Curve brush can be used to quickly and effectively create eyelashes. First model out a single lash and then orient the camera so that you are looking at it from the tip. Go into the brushes palette and select 'Create Insert Mesh'. Turn on Curves mode and draw along the edge of the eyelid. Keep in mind that the upper eyelashes are fuller than the bottom ones.

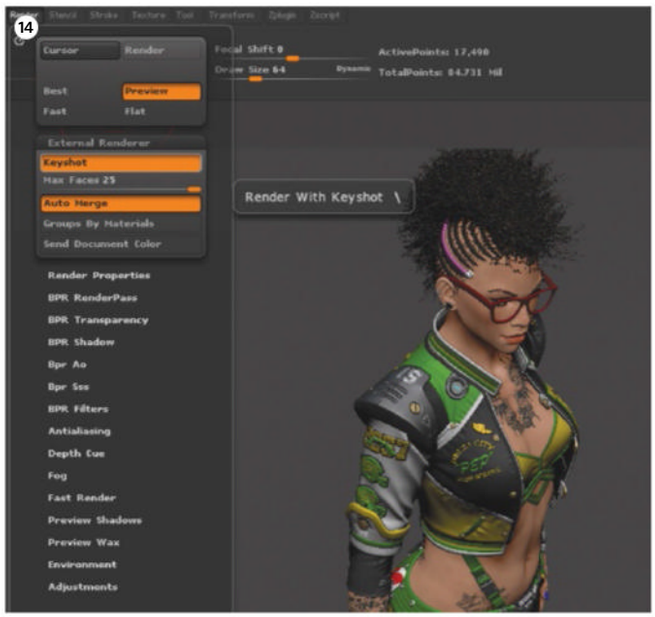
> Go through and assign materials to all of the different pieces to help add another level of detail

Render your character

Export to KeyShot to begin rendering

13 Assign materials Now go through and assign materials to all of the different pieces to help add another level of detail. With M selected, select different materials from your Materials palette. To do this, select the SubTool and do a fill the same way we added the colour. ZMetal was used for things like nuts, bolts and zippers. Skin shader 4 was used for skin. Basic material was used for cloth.

14 Export the geo into KeyShot We'll be using KeyShot 5 to do our rendering. The ZBrush Bridge in 4R7 lets us zap our model and materials right over to KeyShot with the click of a button. Just go to Render>External Renderer and hit the KeyShot button. Now when you hit the BPR button it will automatically launch KeyShot and send over all visible geo.

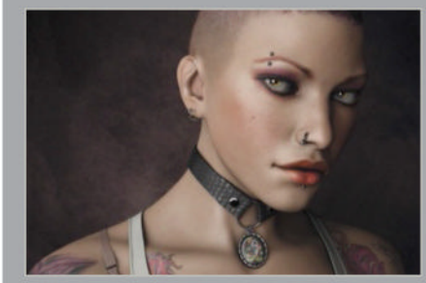


What's in a label?

Adding text and labels is a great way to add another level of detail. In modern times, almost everything comes with instructions. We're so used to seeing labels and logos on things that we don't even notice them until they're gone. Create some interesting logos and labels and place them thoughtfully throughout your piece. Even something as simple as a serial number can add that extra graphical punch to your artwork.

Artist Showcase

Damon 'DK' Woods
My name is Damon 'DK' Woods and I make next-gen game characters. Currently, I'm a professional character artist in the videogame and VFX industry. I'm also a character art instructor at the CGMA Academy.



Indi Girl
2011, ZBrush, 3ds Max, V-Ray
A female bust that I did a while back. It reflects my love for unconventional beauties who go against the grain. Inspired after watching the film *The Girl With The Dragon Tattoo*.

Mr Liu
2012, ZBrush
This was created as a life study. The man's name is Mr Liu and I thought he just had an interesting face with lots of history in it.

Late Night Bite
2014, ZBrush, KeyShot
This was one of my first times using KeyShot. I'm a fan of vampire movies and figured I would put that love into this piece.

Model and kitbash a mech

Photoshop Painter

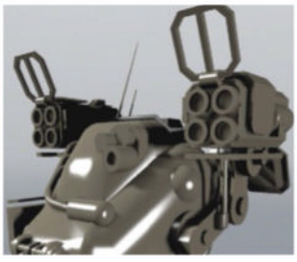
Rocket Combat Mech 2015

Build a semirealistic render, showing off the design of the mech

In these steps we will give an overview of some of the main steps taken when building complex mechanical models from the idea to the finished product. We will explain the thoughts behind the choice of workflows and why we do things in our chosen order. The focus is on kitbashing and quick detailing, and how to avoid the pitfalls that normally come with these workflows. For example we will teach you to use kitbashing extensively while avoiding a repetitive look. We will also show you a process for quickly adding decals and custom text to our meshes. We mainly used MODO 901 and Photoshop for this model, but most of our steps are not program-specific and are adaptable to almost any workflow.

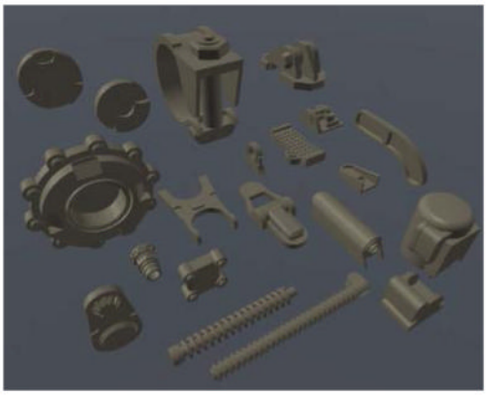
Prepare to kitbash

Block out the basic shapes and assemble the pieces



01 Create the blockout This might sound like a no-brainer, but it's worth mentioning. The foundation to a good workflow starts with a good blockout. It's good to identify kitbashing methods and pieces as early as possible. By finding reoccurring shapes in the blockout, we can plan our kitbashing elements ahead. For example in this model we have relied on cylindrical elements, hinges and different kinds of rails in the detailing and construction of the mechanisms.

02 Set up the scene When working with any kind of complex model, it's good to take the time to set up a solid scene structure, as well as things like mirrored instances. A good method is to have the instances and mirroring set up correctly from the start, so that we can see the end result of the model at all times. It's also good to set up animated parts with test animations, so that we can make sure that things work the way we want them to without accidentally ruining mobility or functionality.



03 Assemble kitbash pieces and details Using the blockout as a base, we can identify possible kitbash pieces as well as find the style for the detailing. Create a decent number of kitbash pieces that you think will be enough to cover most situations on this model. Throughout the modelling phase keep adding to the kitbash library as you will find reuseable elements while building. Try not to create details that are too specific with the pieces so that you can reuse them easier.

> "By finding reoccurring shapes in the blockout, we can plan our kitbashing elements ahead"

Artist Info

Tor Frick
Personal portfolio site
www.torfrick.com
I am a 3D artist with over eight years experience of making AAA games, having contributed to titles like Wolfenstein: The New Order, Far Cry 3, Bulletstorm, Gears of War Judgement and many others. I am currently working as Art Director at Machinegames

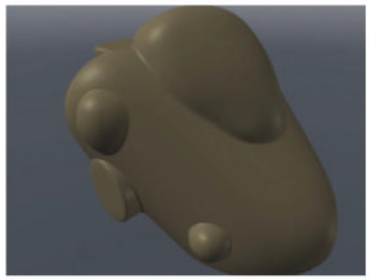
Reusing elements

If you are working on a series of models that are sharing the same underlying design principles or style, kitbashing is even more efficient. Reusing elements between models and constantly growing your library both helps maintain a visual style as well as speed up the detailing process. A good habit is to dissect your model after completion in search of good kitbash elements. It's easy to forget once you are done with something as you just want to finish working on it, but it's well worth the time.

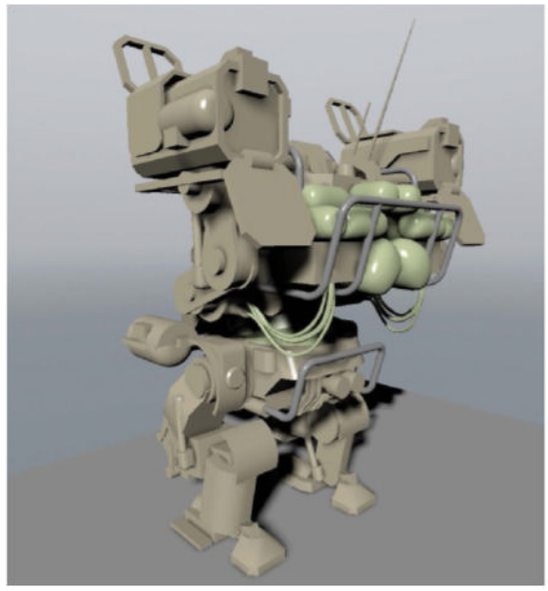
04 Set up core materials and colours Set up the core materials early on – this enables us to keep track of how noisy the final model will be visually. This allows for easier focus on the modelling and a better distribution of the elements because we will be able to catch cluttered or drab areas earlier. It also speeds up the texturing and shading process, since the majority of the materials will already be in place. It also saves time since we will be copying and pasting a lot of elements around.

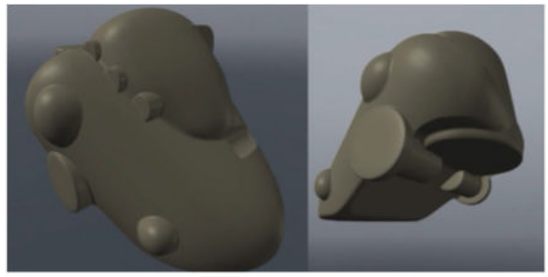
05 MeshFusion base elements For some of the main elements of the model like the cockpit, use MeshFusion to iterate quickly on the large shapes instead of on a traditional mesh. MeshFusion works best when you have large complex shapes and forms that do not need to match an existing design, that's when it really shines. It allows for very quick experiments with shapes such as this. Spend some time experimenting in this stage, deviating from the original idea a bit to see if we find something new since the iteration speed is so fast. The rest of the model is hidden for clarity.

06 MeshFusion polish After getting the base shapes right, convert the MeshFusion to a schematic fusion, which enables us to do a few more complex things like layering the fusions on each other. Spend some time adding additional detail to the MeshFusion as well as cleaning up the angles and setting up the correct hardness of the intersections. Add all the large and medium-sized shapes needed for this part of the model – basically, add everything that needs large, soft transitions. Leave finer details out of MeshFusion entirely.



07 Freeze the fusion After we are done with the MeshFusion modelling, freeze a copy of the fusion mesh and start to model with that as a base. We do this because MeshFusion can get quite sluggish when you abuse it too much with many separate pieces. Separate the mesh into pieces, like the cockpit lid and the base, and start to do more detailed modelling and panelling on it. Use MODO 901's new cutting and capping tool to create quick panels and seams in the mesh.





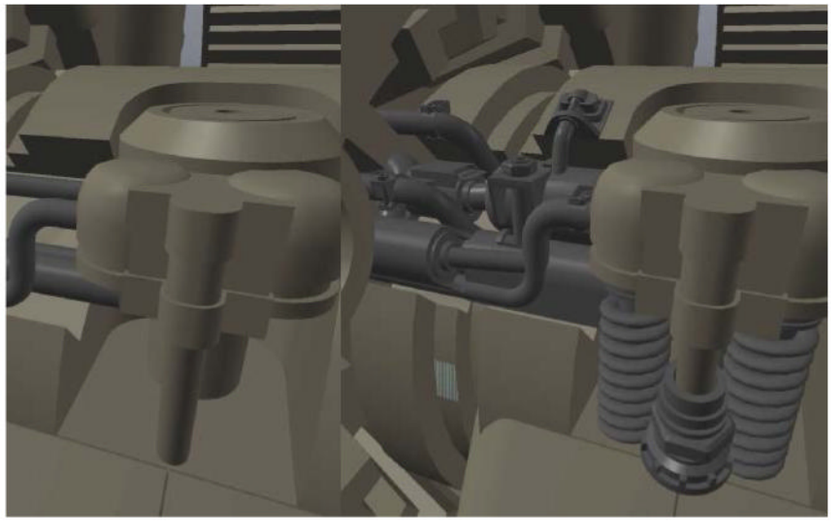
08 Main modelling stage This is the biggest chunk of work for the model. Go through the entire model and model out all the main elements, or replace blockout parts with kitbash pieces, then do a detail pass using the kitbash pieces and flesh everything out to a near-final state. After this step, the majority of the mech has been modelled. During this stage we used a lot of Booleans in the modelling, combined with reused parts to speed up the process. It is during this stage that it's easiest to find new material for the kitbash set.

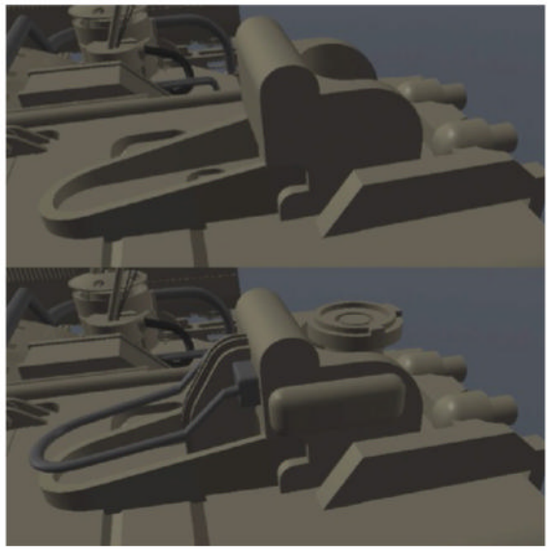
09 Kitbash filler For areas that are hard to see, or out of focus, kitbashing can be a great time saver. Sometimes you need to fill large holes or areas with details, but doing them all by hand can be time consuming. A few areas of the mech could do with some more filling out, so just reuse existing parts (since this is not an area you will see all that well) – making it fit together is not so important.

10 Cover up the kitbashing Once we have used the kitbash pieces everywhere, it starts to look overused and you can spot the repetition if it's not hidden well enough. Always take a quick pass to change some of the more obvious reused ones by adding or subtracting elements from them. The majority of the touchups we do includes rescaling parts of a kitbash element or just deleting parts of it, or covering/adding to it with some additional simple shapes. Most of the time, simple changes are enough to get away from repetition.

11 Sculpting and cloth To break up the monotony of the metal surfaces, it's a good idea to introduce some cloth and additional equipment (like bags for example). Parts of the cloth is sculpted in MODO by using the sculpting tools, which are great for quick, basic sculpting. For the more complex parts like the bags, we used Marvelous Designer combined with some quick shapes to simulate bags with packing in them. They are then instanced out in MODO so that the file does not explode in size.

> "Before we do the very last detailing step with floating details, we need to create a small selection of details that we can clone out over the model. A selection of rivets and different small insets is more than enough"

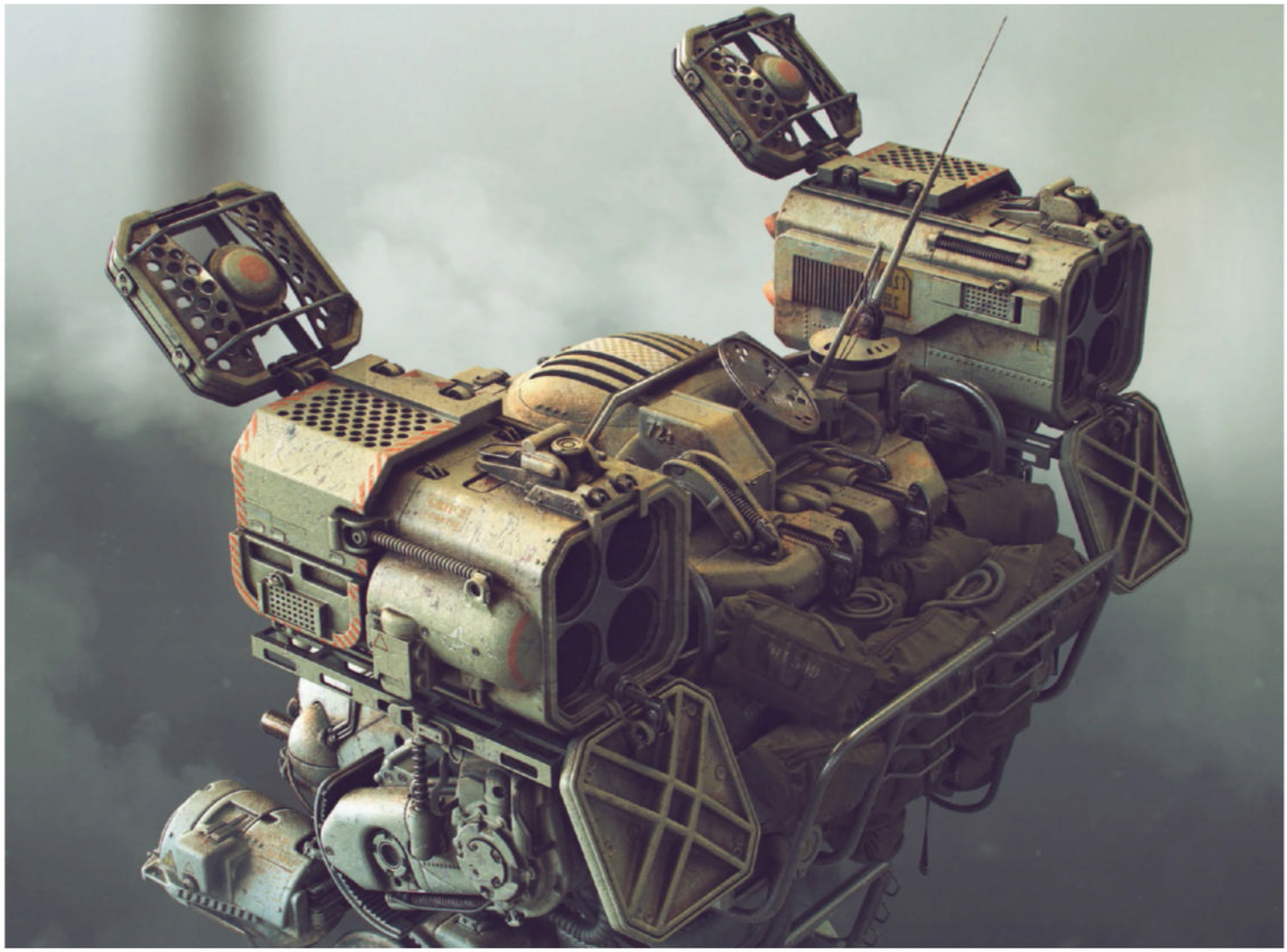




Do your UV maps earlier!

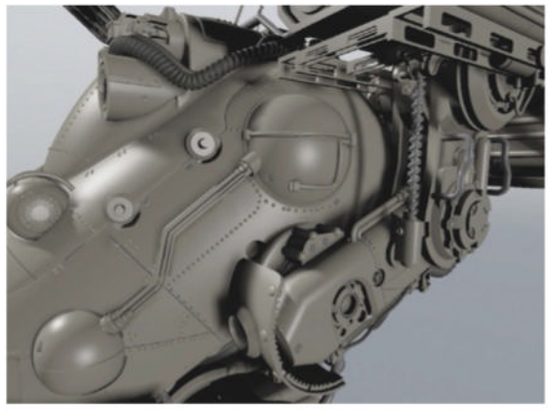
If you are aiming to texture and render the high-poly model properly, make sure to UV your kitbashing pieces before you start redistributing them in your model. That way you have already done UVs for a large part of your model from the get-go. Even if you alter a lot of the geometry later, the base unwrap still carries over.

12 Set up the floaters Before we do the very last detailing step with floating details, we need to create a small selection of details that we can clone out over the model. A selection of rivets and different small insets is more than enough for this model. A good trick is to give them their own material, so that you can easily mask them out if needed.



13 Fine detailing This is the final detail pass where we add the rivets, small details and so on. The reason why we do this so late is because it can make or break a model. Sometimes it's hard to know what you have until this the model is almost complete. We do not want to create overdetailed areas, or cover areas of rest with small detail. The Tack tool and Clone tool are your best friends when it comes to placing detail meshes in MODO.

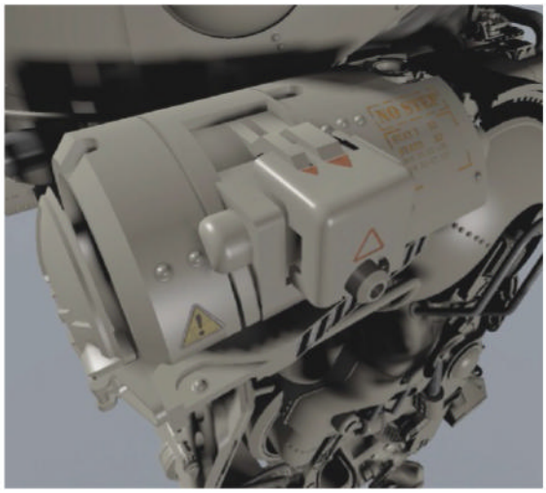
14 Set up the decals The same way that we set up kitbashing elements earlier, set up a number of decals that we can combine: a few generic warning signs, some numbers, as well as some custom decals. Create these as separate mesh planes with a texture so that you can place them more easily using the same tools, the same as when placing the mesh details.



Rendering floaters

One problem with using floaters in renders is that if used incorrectly, or too aggressively, they can become quite obvious. There are a few ways to minimise their impact in the render. One is to separate them to their own layer and turn off shadow casting. If you render an AO layer in MODO, do it using an occlusion node instead of the AO render output – this method creates a fake and faster AO that doesn't highlight the floating details.

15 Place the decals and text The same way that we were holding off on adding the small detailing like rivets and so on, we hold off on adding decals until the end. We don't want to end up with a cluttered model with too many decals in obvious copied-and-pasted locations.



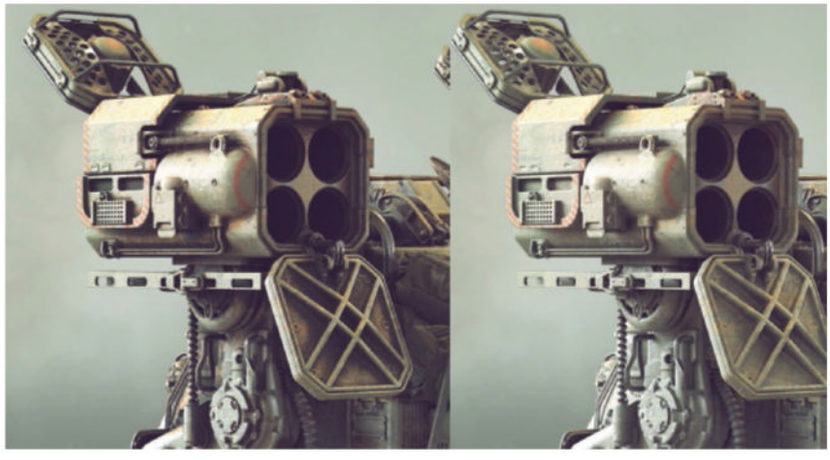
16 Set up materials Set up some instances of the materials so that you can easily create more colour variations without having to create new base materials from scratch. We do a lot of the colouring by just tagging materials instead of adding textures to the model, saving us a lot of time when doing quick designs. Do not be afraid to create extra cuts and lines in your model only for the purpose of assigning colours. The main colour variation in the mech comes from material instances only. A simple tiling Bump map and diffuse texture are all that drives the main material.

> We do a lot of the colouring by just tagging materials instead of adding textures to the model, saving us a lot of time

17 Postrender tweaks After rendering out the model, we take it into Photoshop for some quick touchups to get our final image. A quick trick is to render out an ambient occlusion layer and multiply that, combined with a colour to get a very basic dirt pass for the render. To get away from that artificial look, play with the layer blending and manually mask away parts where the AO is too strong. A few quick material overlays can get you a long way.

Decals

An alternative way to create the decals is to have a decal sheet as an image only, and then camera project UVs from the viewport onto the decal sheet. That way you do not have to bother with planes for the decals, and it can make things easier.

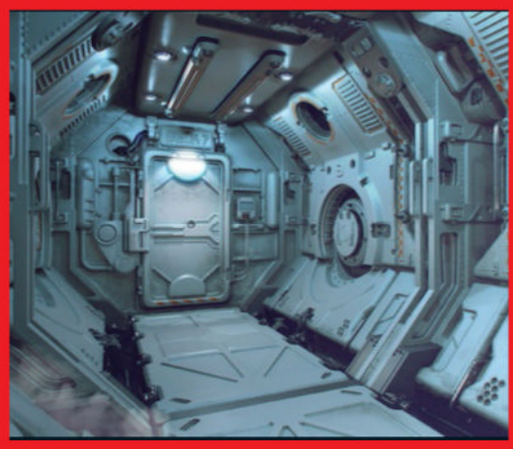


Showcase

Tor Frick

I am 3D generalist working in the videogames industry as an art director. I spend most of my time talking, studying or making 3D in different ways, preferably involving some kind of sci-fi and machines.

***Steampunk microscope*, MODO, Photoshop (2015)**
A study in modelling and shading, breaking away from sci-fi for a bit.



***Scifi corridor*, MODO, Photoshop (2015)**
A sci-fi corridor speed-modelling session for exploring new features in MODO.

***Scifi speeder*, MODO (2015)**
A sci-fi vehicle I made as part of a larger scene to test out new techniques. Textured using procedural shaders only.

Master magical manga effects

Photoshop Painter

The Blue Sorceress 2012

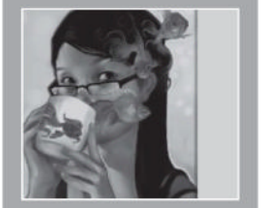
Schin Loong reveals how to create supernatural effects in your manga drawings

We all grew up with magic as children. Fairytales, nursery rhymes, cartoons and songs stir our imagination and every child has fantasised about having magical powers. But how do you portray such hidden powers in a painting? Japanese manga has been especially successful in this by manipulating colour, depth and special effects. The clean, simple lines of manga lend themselves well to magical effects because they provide a strong foundation for you to build on with colour – and tones and values should be key factors in a magically themed piece. The values should be dramatic, hinting at the arcane powers that your character is summoning up and the colours should be shimmering and otherworldly to enhance this.

Having a strong action pose for the character also helps present the powerful magic that is happening; no self-respecting magician would just stand there slouching when casting a spell! Consider that the magic your character is using is a form of energy and, just like every other kind of energy, that will be expressed within their pose. If your character is violently hurling fireballs, for example, that's likely going to take considerably more exertion than if they're swirling cosmic smoke, so you will have to communicate the level of effort they're making through their stance and gestures to express it effectively.

The magic itself should look and feel tactile – the viewer should have a sense of whether it's hot or cold, gentle or aggressive, slowly building or ready to strike. You can manage all of these effects through your use of colour, lighting, opacity and shape – all of these hints are useful for the viewer to understand the context of the painting and should be fully utilised by the artist. Here we will go through the steps to create this mysterious blue sorceress. You can find all the tutorial files that you'll need at **filesilo.co.uk/bks-890.**

Artist Info



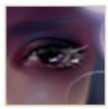
Schin Loong
Personal portfolio site
www.schin-art.com
I started drawing pretty girls after watching Sailor Moon as a child. Now I work as an illustrator in Las Vegas and try to draw more whenever I have the time. If I could have a magic power, I'd choose the power to implant the song The Final Countdown into my enemies' heads.

Sketch your ideas

Decide on your character's personality and paint accordingly

01 Sketch poses
First come up with some simple sketches of how you want your character to pose. This character is a mysterious blue sorceress, who may or may not be evil, but we want her to be beautiful and deliberate in her spell casting. Have her looking directly at the viewer while holding her hands up.

02 Capture the sketch
Choose one of the sketches and expand upon it a little more. Build up where to place the hair and the hands, and add some details like jewellery and bangles.

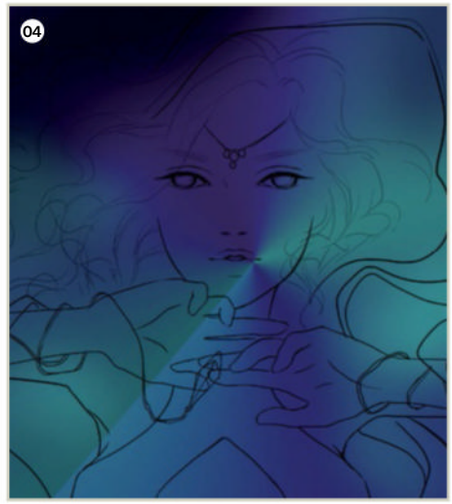


Build up the mood

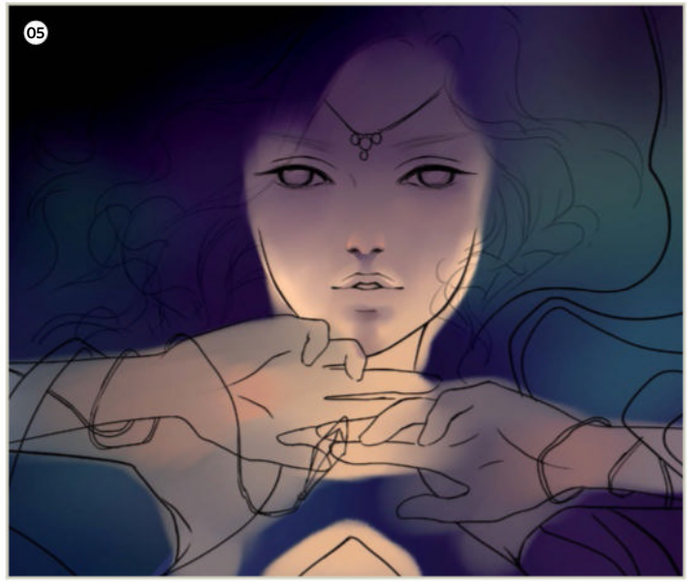
Bring in colour and form befitting a sorceress

03 Clean it up Now you will need to clean up the line art with stronger, more deliberate strokes so it will be easier to paint over. We've left the hair and eyebrows alone as they are meant to be fine and flexible.

04 Set the mood Set the line art layer to Multiply and place a layer under it to be the background. This will largely dictate the mood of the painting. We want this sorceress to be cold, mysterious and commanding, so choose a gradient of suitable blues, greens and mysterious hues. These will help strengthen her personality and aura.



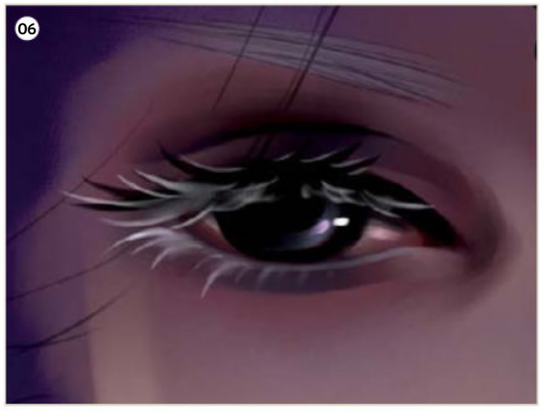
05 Block out the skin Block out the skin colour but keep as many of the underlying blue tones visible as possible so that she integrates well into the surroundings instead of floating up over them. We want the light source to come from her hands, which will have the effect of lighting her face from underneath – another trick to make her look imposing and mysterious.

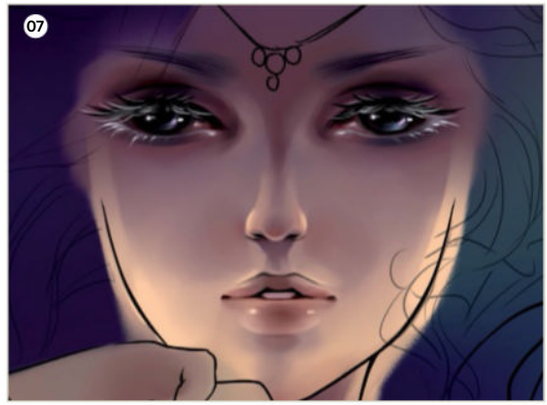


Layer styles

Experiment with everything Photoshop has to offer, from filters to layer styles, brush presets and image adjustments to get as familiar as you can with this program. If you get stumped there are tons of resources and tutorials out there online that will help you form the perfect painting. Spend a little time researching these to build up your creative techniques.

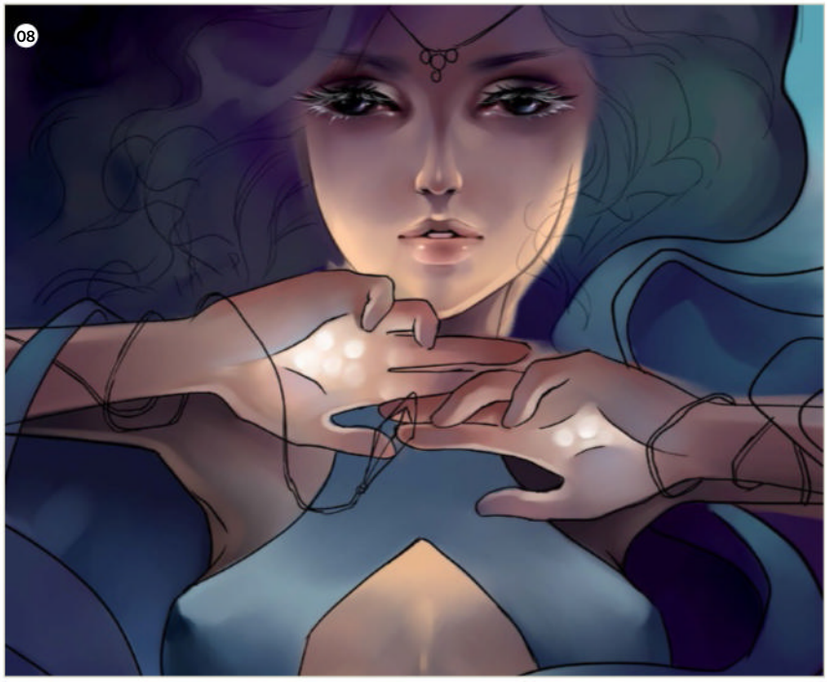
06 Dark eyes, dark soul Start with the face first, shading in the eyes and nose and painting on very dark eye make-up. We want to make it so dark that you can barely see her eyes. To add to her uniqueness, give her white eyelashes over dark eyeliner.



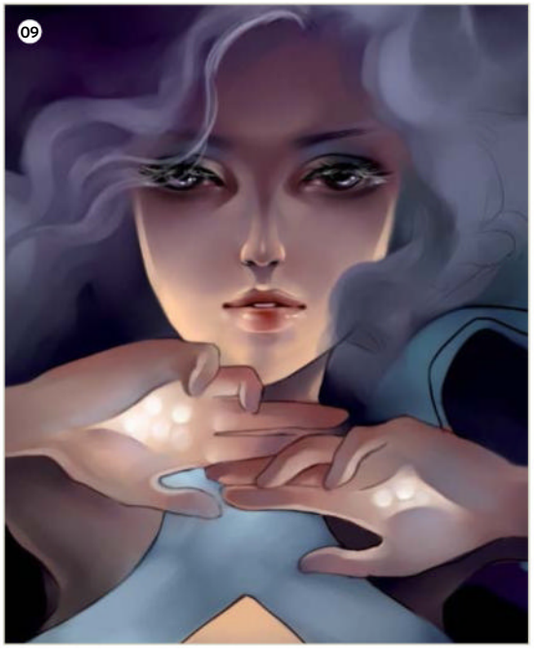


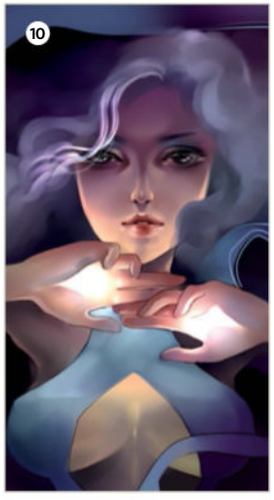
07 Finish up the face Little white highlights in the eyes are all that's needed to bring life to her face. Be careful not to overdo it, though, as you don't want her to look too sparkly. A touch of light here and there should be enough. Keep her lips nude so they don't distract from her eyes too much.

08 Peripheral tweaks Lighten up the dress and scarves and experiment with lighter hair. Brighten up her hands (where her magic will be strongest) and add some points of light on them to remind yourself where the light source will be coming from.



09 Erase the line art If you find that the thick line art is getting distracting, you can erase the majority of it at this stage. Make other adjustments, for example you can change the colour of her hair to white to contrast with the dark background and add a bit of a sexy blush to her eyes and lips.





10 Change your mind and edit The beauty of working digitally is that you can make changes at any stage of the process. Try making her larger for more impact and also play with the colours. Saturating the colours and highlighting her hands can help emphasise where exactly all the power of the magic is focused.

> “It’s important to keep the momentum and flow going when you’re working and not to worry about achieving the perfect painting”

Magical characters

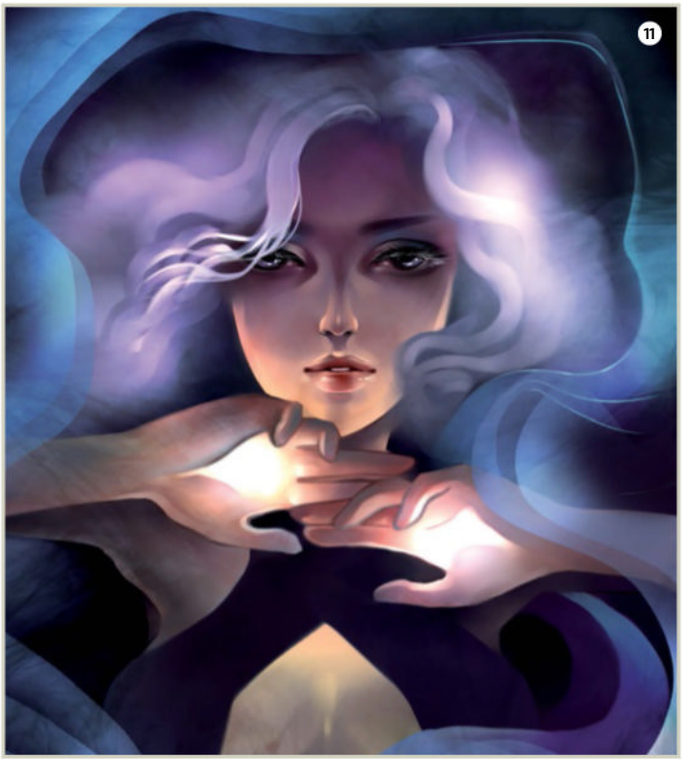
Explore images of beautiful sorceresses throughout the ages

There have been many examples of artists depicting supernatural power and magic throughout history. Learning from these pieces you will come to see that your characters don’t necessarily have to be depicted as active all the time. Your sorceress can appear just as powerful sitting down if you take inspiration from these images and show their power in another way.

Artist: **Georges Merle**
Title: **L’Envoûteuse**
Date: **1883**
Location/Owner: **Birmingham Museum of Art**
This painting just screams occult power! Look at her surroundings, the foreboding skull is a dead giveaway. Her pose and piercing eyes give her an eerie presence, as if we had disturbed her in the middle of a spell. The painting is quite realistic and you can really feel her unwavering gaze upon you even with the most cursory glance.
tinyurl.com/da-merle

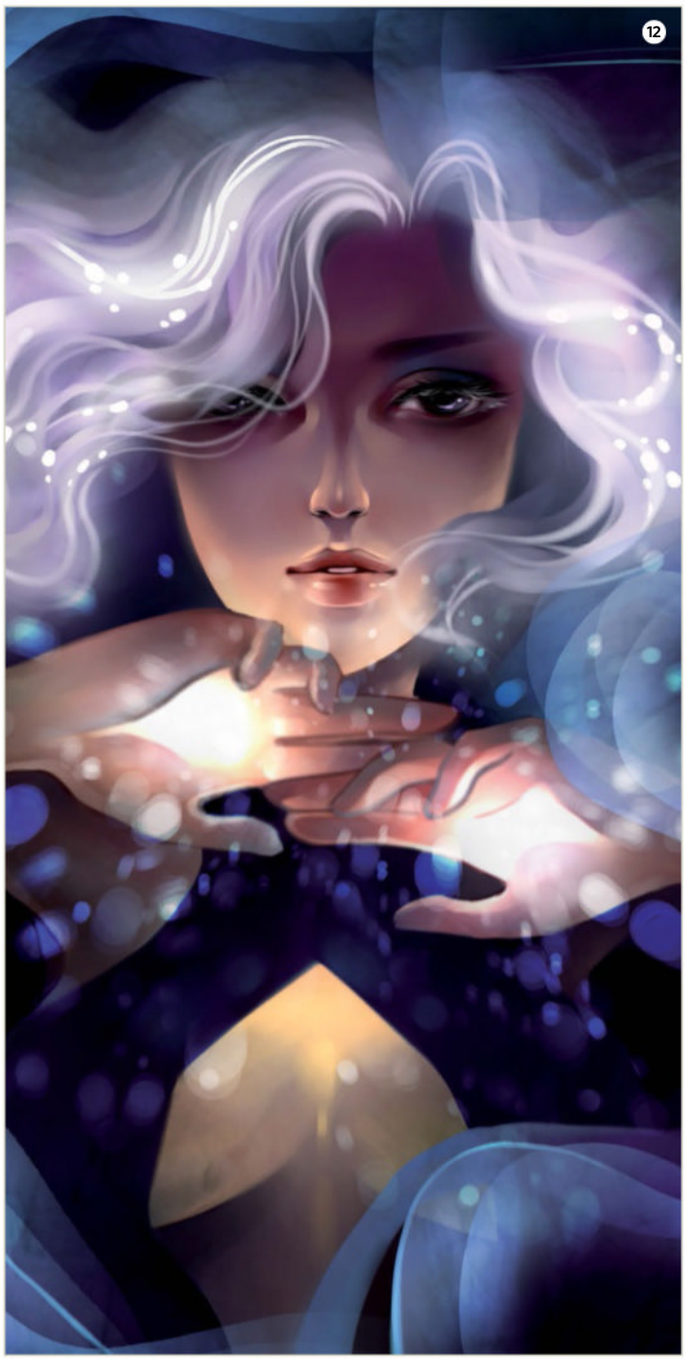
Artist: **Henry Meynell Rheam**
Title: **The Sorceress**
Date: **1898**
Location/Owner: **Private collection**
Similar to Merle’s sorceress, this painting has a lot of power, but in a different way. Her pose is still very commanding and stern, but the painting is rendered in watercolour, so the smoke swirling around her fades gradually into her hair.
tinyurl.com/da-rheam

Artist: **Utagawa Kuniyoshi**
Title: **Mitsukuni Defying the Skeleton Spectre Invoked by Princess Takiyasha**
Date: **1844**
Location/Owner: **The British Museum**
Here is a ukiyo-e sorceress from Japan summoning a horrifying skeleton. She is holding a scroll and reading the magical incantation to invoke the spirit. Though small in the image itself, her gestures are obvious and full of character.
tinyurl.com/da-kuniyoshi



11 Tweak textures Centre your character more and embellish the flowing scarves around her to create a kind of frame. Lay a smoke texture over the painting to create movement and finally paint bright points of highlights to place her in an eerie atmosphere.

12 Magic modes Create some highlights and experiment with various blending modes for the layers – we chose Color Dodge and Overlay. A few strands of glowing hair finish the effect.

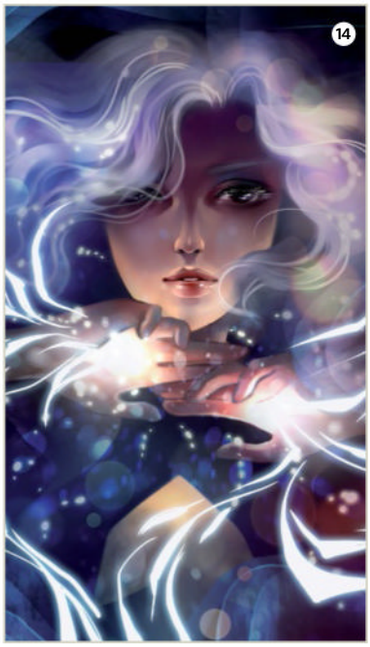


13 Glows and special effects Using the Outer Glow layer effect, paint dots swarming out of her hands. These really contrast with the dark painting to stand out. Also play around some more with the background and change the colours to help enhance the sense of a magical environment.

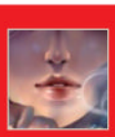
It's okay to change

Don't be afraid to merge layers, make composition changes or delete entire elements if they are no longer useful to the painting. It's important to keep the momentum and flow going and not to worry too much about achieving the perfect painting. Keep file backups in case you don't like any tweaks you make along the way.

14 Lightning Now for the fun part. Add white lightning streaks coming out of her hands to seal her sorcery. Create a new layer, set it to Outer Glow and just go for it!

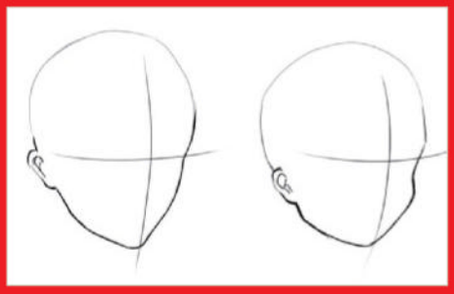


> Change the colours to help enhance the sense of a magical environment

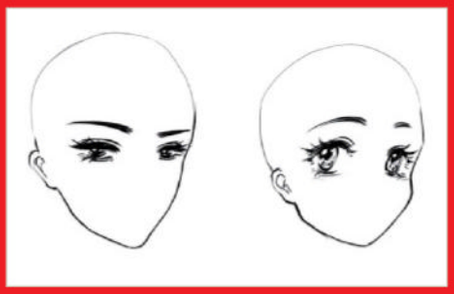


Manga expressions

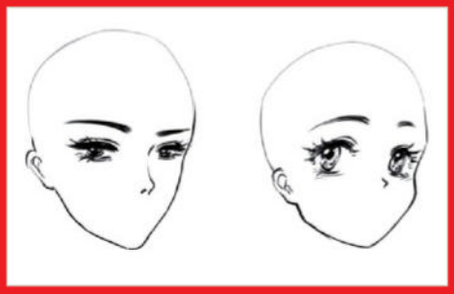
Manga may seem simple, but every line has a meaning



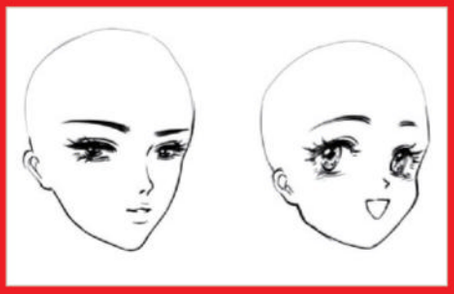
01 Facial shapes A longer, slender face is a more mature and feminine sorceress. A more rounded, chubby face suggests more of a clumsy but cute apprentice.



02 Eyes Smaller, darker and longer eyes suggest a sultry glance. Bright, large eyes are innocent and cute. Arching eyebrows can also be used to suggest a cheerful face.



03 Noses Our sultry sorceress has a perky, long nose that fits her mature face shape, but our innocent student magician has a tiny, cute nose to suggest youth.

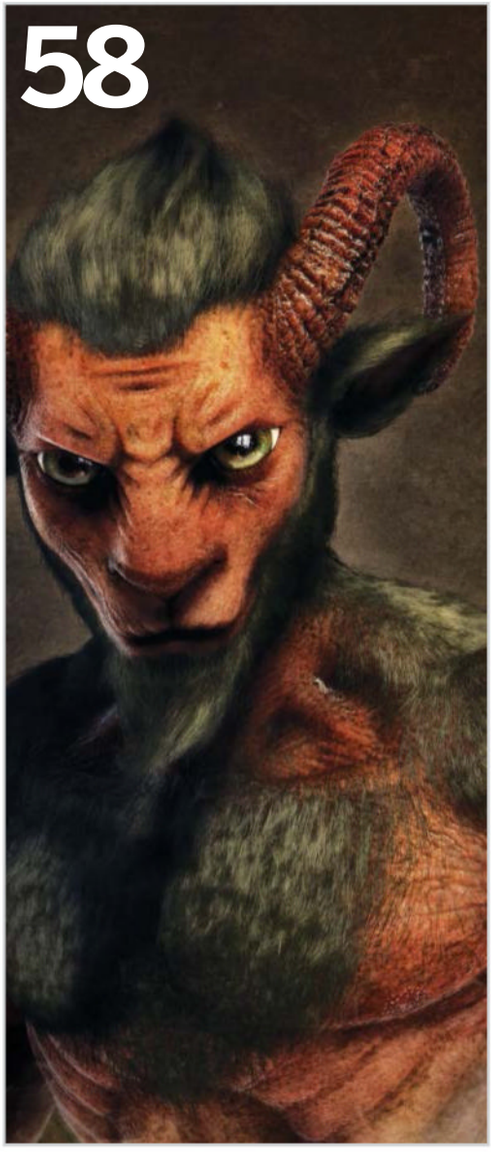


04 Mouth and expression When smiling mysteriously, mouths are small and demure. When laughing, a manga mouth can be drawn to form a perfect triangle.

15 Touching up To finish, tweak the details, enhance her eyes even more and make some compositional adjustments. Erase some of the lightning if you feel it's detracting from the effect and continue adjusting until totally happy.

Creatures

Learn to design iconic creatures



“The ZBrush is a great tool to use in conjunction with Photoshop, you can achieve great-looking results”

70

Create a mythical beast

Photoshop ZBrush 3ds Max V-Ray

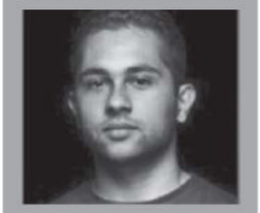
Fauno 2011

In this step-by-step guide I will offer an insight into my workflow for the personal illustration Fauno

Intrigued by mythical creatures, I decided to create one as a personal 3D project. Over the next six pages I hope to share some of the techniques I used to produce this fictitious beast.

For those who may be unfamiliar with this creature, the faun is a man with goat's horns, ears, tail and legs referred to in Roman mythology and elsewhere. The subject presented a great challenge because there were many different elements to incorporate. I used 3ds Max, ZBrush, Photoshop and V-Ray to tackle the task, the techniques of which I'll reveal here.

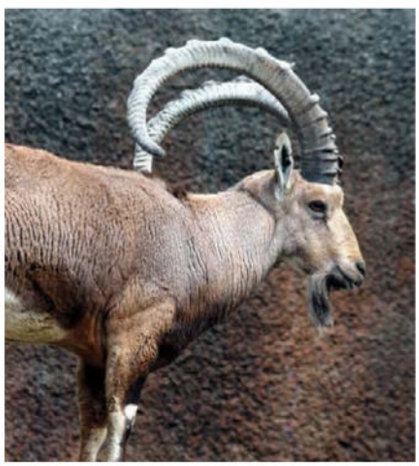
Artist Info

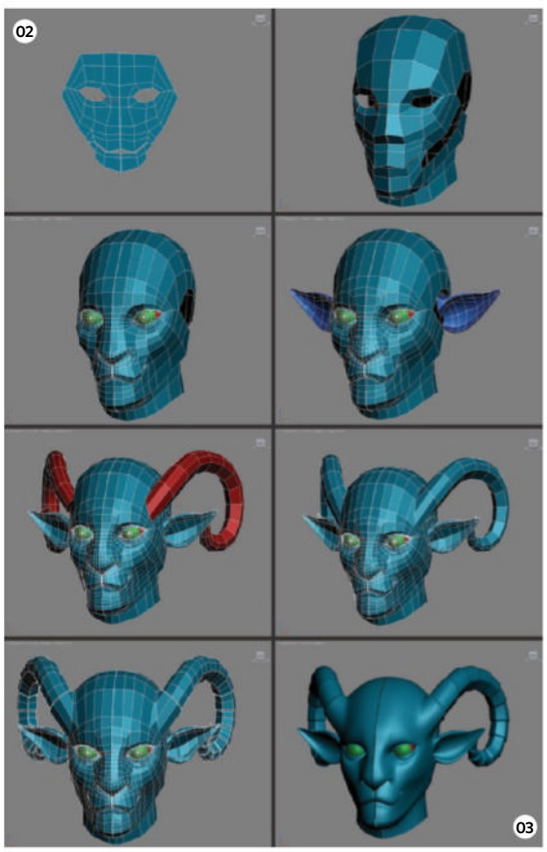


Luiz Alves
Personal portfolio site **www.behance.net/kitoalves3D**
Country **Brazil**
Software used **3ds Max, ZBrush, Photoshop, V-Ray**
Luiz is a freelance 3D generalist currently based in Brazil

Initial concepts

From rough ideas to designing the model





01 Seek inspiration First search for appropriate reference material to establish the exact tone and style of what it is you would like to create. Since the faun is made up of limbs from both man and beast, it's a good idea to find plenty of images of each to familiarise.

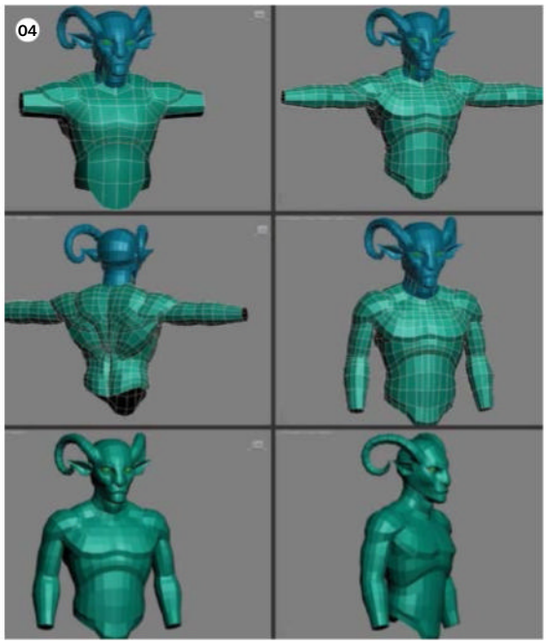
02 Build the base mesh Now I have an idea of what I would like to create, it's time to produce the base mesh. I tackle this by starting with the face first, poly by poly. By drawing the basic face loops and following the appropriate flow, it prevents any strange deformations in the geometry.

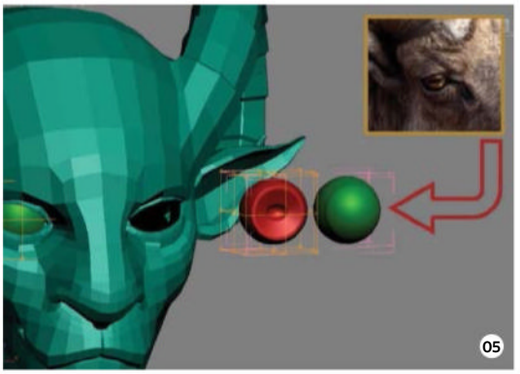
03 A question of curves Once I have a basic shape I move on to refining the geometry. I made the ears with a basic primitive out of the head and horns. Meanwhile, the curvature of the horns was built with a simple spline – it was already the shape I wanted and was then converted into polys.

Build features

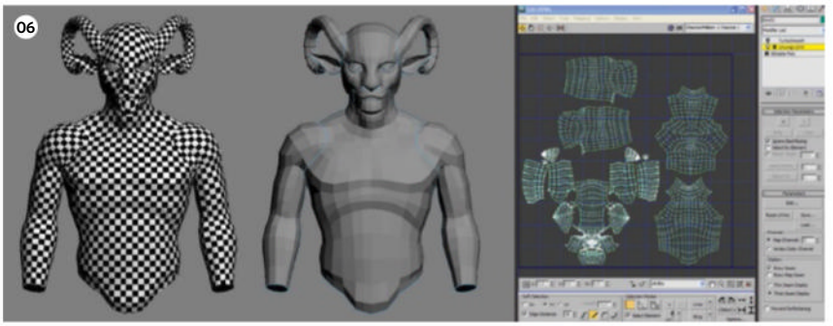
Progress the character's design

04 Shape geometry With the head modelling finished, I move onto the bust creation. I start with a simple box, adding some loops and making adjustments where necessary to create a humanoid shape. Once I'm happy, and the geometry is taken care of, I move the arms down to facilitate the rig process and minimise deformation during the posing.

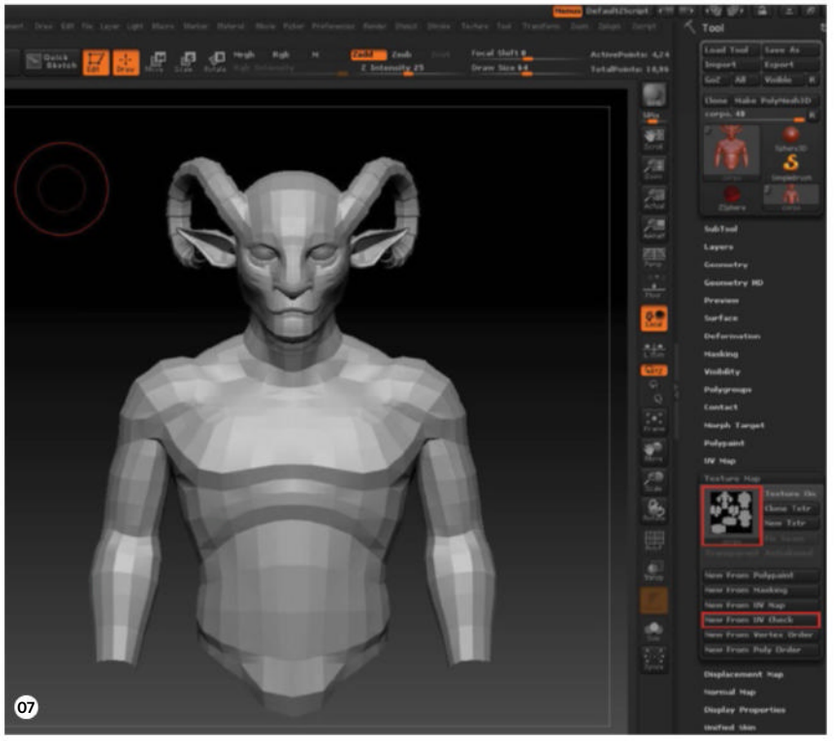




05 Produce the peepers Since the faun is a blend of man and beast, I wanted the eyes to reflect that. I decided to produce a variation of a human eye and a goat eye. To do this I made a little deformation in the eye to look like a goat and added an FFD modifier to align the eyes in the face. When making realistic eyes, it's necessary to have two meshes – one for basic colours and the other to make a liquid effect. It works well to produce the Reflection and Refraction on the eyes.



06 Move on to maps With my basic mesh finished, it's now time for UV mapping. I organise the UV maps and use the chequered map to indicate whether there is any deformation. In order to economise the space in the UV area, I organise them into groups of similar sizes.

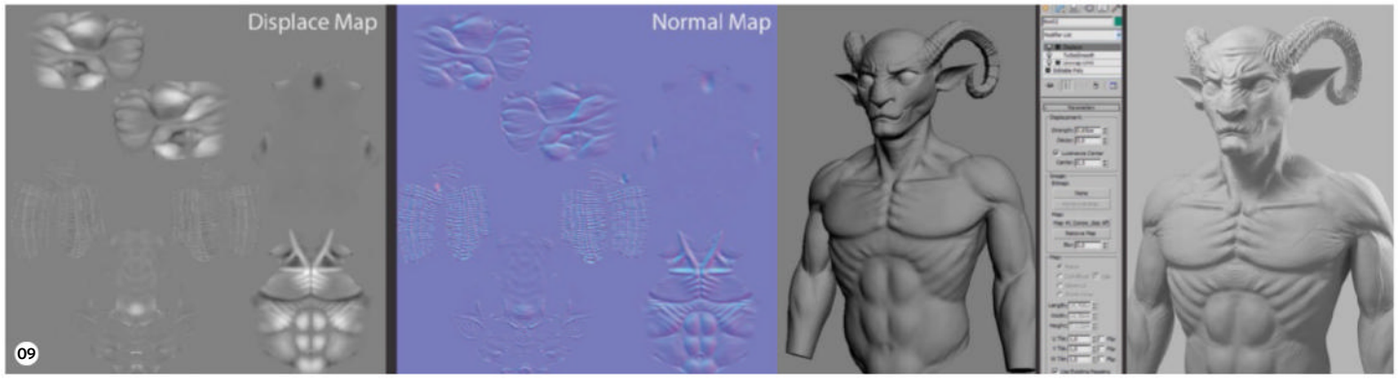


07 Sculpt stage After modelling and mapping the base mesh, I export the OBJ file to ZBrush. Before I start sculpting, I always check to see if the UVs are correct with the UV Check tool in the Texture Map panel. This way it guarantees I won't have any map-related problems.

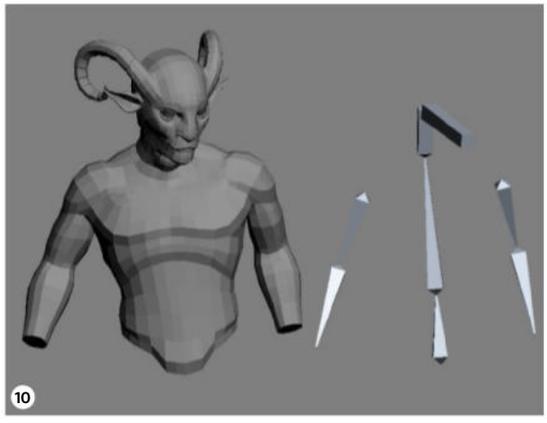
08 Use the brushes Once I have subdivided my model to five levels, I begin sculpting the volumes and details with ZBrush's basic brushes (Standard, Flatten, Smooth and so on). I use alphas to create details such as creases, scratches, deformation and asymmetrical small details.

Lighting and polypainting

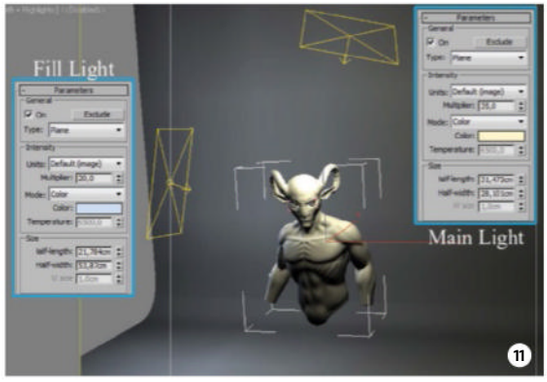
Apply realism to your model



09 Return to 3ds Max Now I have finished the sculpting stage, I export the displace and normal maps created in ZBrush back into 3ds Max. Once there, I use the Displace modifier with TurboSmooth to apply the maps to the model. To test the maps, apply a simple V-Ray shader with one VRayLight to check the model over.



10 Strike a pose Rigging and skin is next on the list. I make a basic bone structure and apply the skin modifier to control the mesh. This means I can pose the faun and tweak the position of the camera.



11 Illuminative advice I decided to stick to a very simple light setup for this illustration. I tested my light using a basic V-Ray shader in grey and also added an infinite background, similar to what's used in photographic studios. Two lights were present: one yellow on the head with more intensity and on the right-hand side of the character a blue, less-intense one.

Challenges with the project

Certainly the greatest challenge I faced during the faun's creation was the hair – it was tricky to both make and render it. Lighting also took quite a bit of effort, since I needed to test different configurations of setups and rendering specific to him (he didn't work well with V-Ray). As a result, this had a knock-on effect in the postproduction stage where I had to composite the two elements to produce a seamless integration of the two. It was tricky, especially considering both had different lighting setups and so on. Despite the difficulties, I learned a lot from my experimentation with these processes and hopefully, with the help of this tutorial, you can too.

> "Since the faun itself is a blend of man and beast, I wanted the eyes to reflect that. I decided to produce a variation of a human eye and a goat eye"

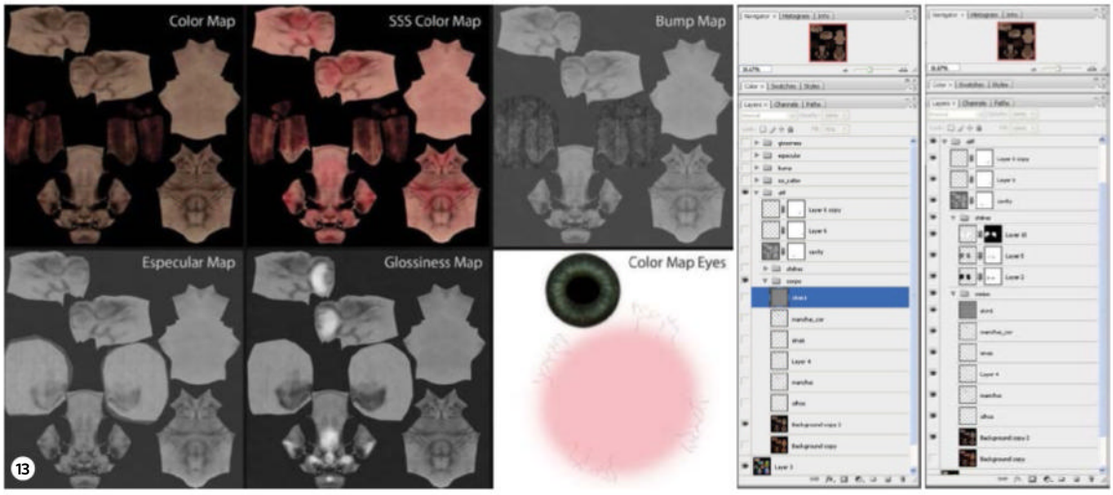
12 Paint the character Now the lighting is sorted, I head back to ZBrush to paint the colour map and create a cavity map. I use the Polypaint tool to paint my basic channel of colour map, mixing a large number of alphas I've created with skin variations and false shadows to raise areas on the body. I use the cavity map with the colour map to gain more volume and detail on the skin.

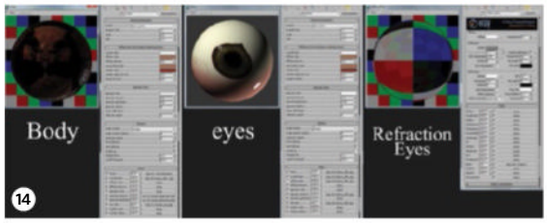
Add skin and hair

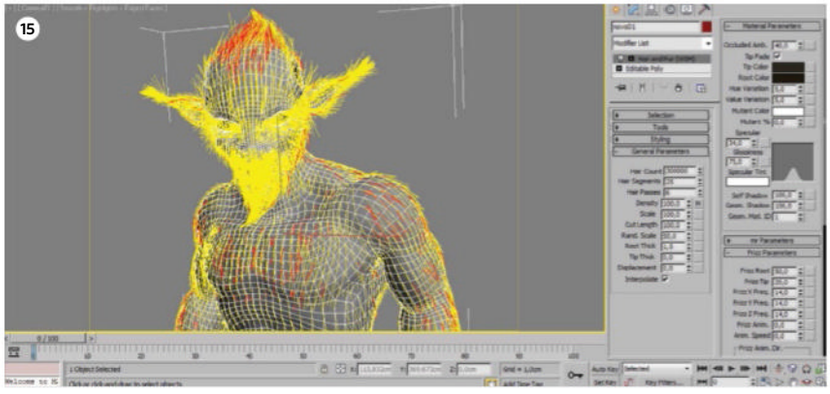
Use shaders, maps and more

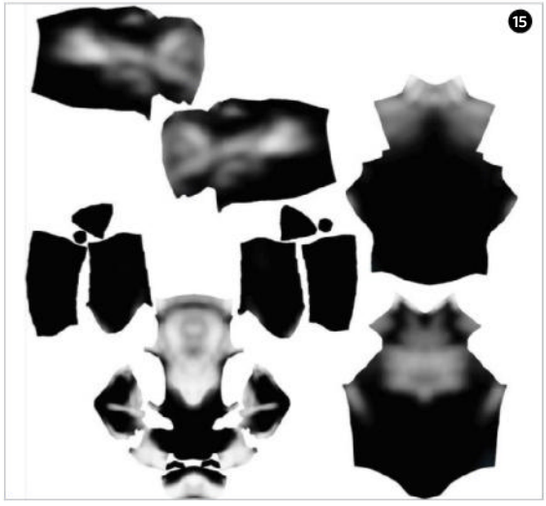
13 Get dirty It's time to start the final textures. Using the basic colour I've made a lot of layers in Photoshop in order to add more details with more definition. I've mixed all kinds of textures to create cracks on the horns, dirt, stains and I've added the cavity map so it doesn't look so clean. All the maps are created at 5,000 x 5,000px.

14 Realistic skin I complete the shading process using the maps created in Photoshop. To simulate more realistic skin, I would suggest using VRayFast SSS2 – a practical and fast V-Ray shader that's great for translucent materials. To control the SSS shader create a SSS mpa. Meanwhile, I use the VRayFast SSS2 to make the translucent aspect of the eyes, but to give a reflective element I create a Refraction and Reflection shader applied on the superior eyes geometry.









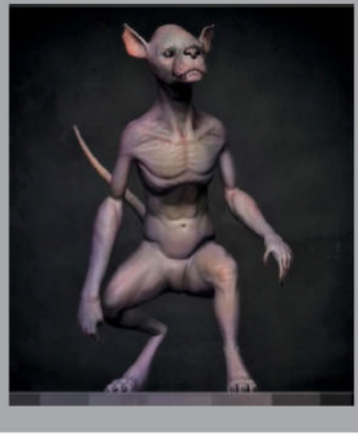
15 A new coat The faun's fur was created in 3ds Max's Hair and Fur modifier. In order to optimise the process it's necessary to convert the base geometry into a new geometry. This way it is possible to brush comb it really fast and get control using a density map I made in ZBrush.

Artist Showcase

Luiz Alves

I'm a freelance 3D generalist working in a freelance capacity. I've always loved art, animation and special effects in movies since I was a kid. My course in Digital Media Production gave me a great start on my artistic journey. Since graduating I've continued to evolve my traditional and digital art skills and knowledge to improve my personal and professional portfolio.

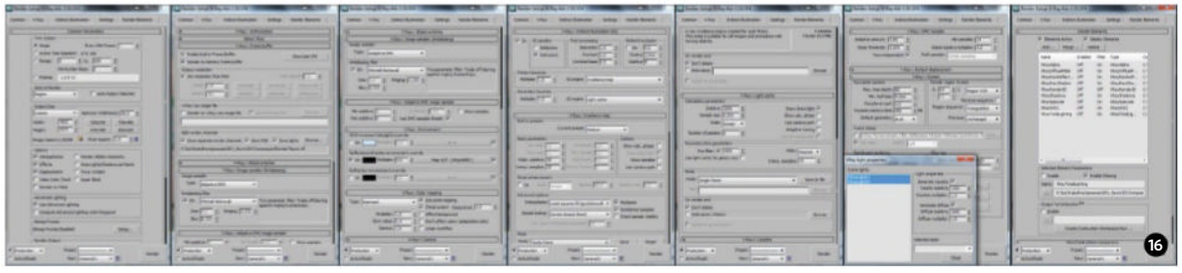
Bravo **3ds Max, ZBrush and Photoshop (2009)** I created this model as a character study to practise creating realistic facial features.



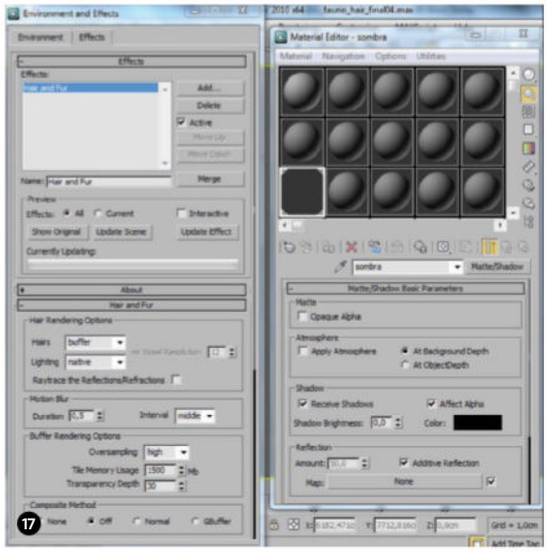
Chupa Cabras **3ds Max, ZBrush and Photoshop (2009)** The goat-sucker creature was my submission for a 3D4ALL forum challenge. I tried to create something that was fantastical but that also carried a strong resemblance to a common animal in our lives.

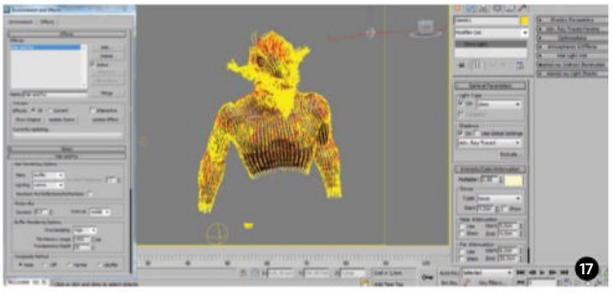
Achieve the final render

Techniques to combine two assets into one



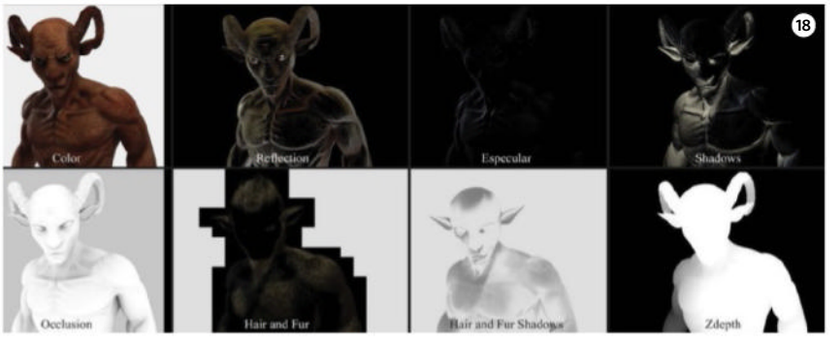
16 Increase the size The final render for this illustration was generated in 4,000 x 3,072px as an 8-bit TIFF file. I prefer to use a larger scale for the final render because it makes it easier to make selections while compositing everything and I can see more details than if it was a medium-quality image. If you look closely, the medium render always produces a blur in the finer details, whereas this doesn't happen often with the higher quality render.

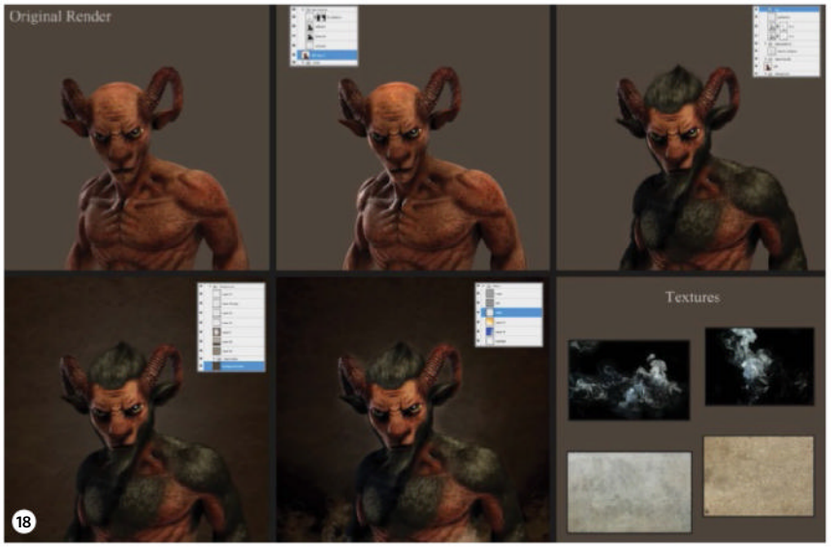




17 Furry problems The render process was different for the fur because hair and fur doesn't work with VRayLights. In order to make the fur render, I worked with Scanline render and Omni Lights in the same positions as the VRayLights. It's important to remember that when we want to render the fur, the resolution of it is totally proportional with the tile memory usage – so if you want to render in large scales, you will need to set the tile memory usage in large values, otherwise it won't render.

To improve the integration of the body and the fur, I created a render channel just for the fur shadows. I then applied a matte/shadows material and turned the option off in the panel effects so that the shadows are only generated on the body.





18 Final touches Now it's time to tackle the composition. My postproduction stage was completed in Photoshop. Using the channels applied on the original render you can control aspects of light, shadows and reflections. With the body setting closed, prepare the fur – it will be necessary to paint the fur and simulate some shadows on the body to make it look more real. Add a Noise filter, some colour gradients and one layer to paint necessary highlights.

Boy Lucas **3ds Max, ZBrush and Photoshop (2011)**
My nephew inspired this piece. I realised that the looks and expressions of children are something very interesting. They carry a feeling of pure joy that we gradually lose as we reach adulthood. I tried to capture this look in the bust to make me always remember what we once were.

Master the art of creature creation

Terrorfish – Leviathan 2014

Create a highly complex and detailed sea creature, from concept to model and final render

This sea monster was created so I could practise creature modelling and texturing at a large scale. The following tutorial will guide you through the processes I learned, from inspiration through to final render. By the end of this tutorial you should have developed an understanding of how Maya, ZBrush, MODO, MARI and Photoshop can be used to tackle such a project. You can find all the tutorial files at **filesilo.co.uk/bks-890**.

The Leviathan was a very complex task in terms of modelling, texturing and composition. The following steps will demonstrate how the model can be built, textured and rendered. Furthermore, we will take a closer look at how such a huge and task can be executed efficiently.

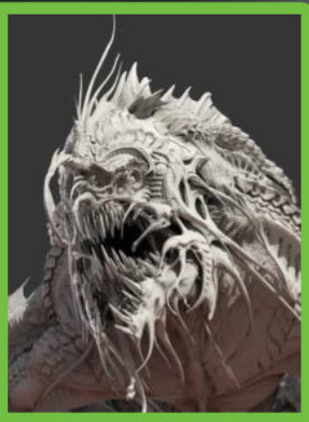
This project helped me gain a great deal of experience in the creature modelling and texturing field. By exploring the process of creating the Leviathan, you'll see how this workflow can benefit your own projects.

Learn how to

- ☑ Develop a creature concept from inspiration and reference images
- ☑ Model the monster's head
- ☑ Block out the body
- ☑ Organise a large and complex model
- ☑ Keep details and colours consistent across a wide variety of objects
- ☑ Create Bump map layers using MARI

Concept

We've only explored a relatively small part of the sea, so I can only imagine what else might live down there. Due to my fascination with sea-life – especially deep-sea creatures – and inspired by monster myths, I wanted to create my own interpretation of a Leviathan beast.



Artist Info

Benjamin Erdt

Personal portfolio site **www.ben-erdt.de**
Country **Netherlands**
Software used **Maya, Modo, ZBrush, MARI, Photoshop**
Character and creature artist, utilising a range of techniques and styles

Inspiration and research

Develop your ideas and gather reference

01 Set your goals For this project I conceived the Leviathan as an enormous creature living in the ocean. To get a sense of the scale, I imagined that an aircraft carrier would be a little toy compared to its size. The song lyrics of a well-known pirate metal band describe the hunt for a Leviathan as well as the fight, which were the initial sparks of inspiration to design and create the beast in 3D. We want to make a creature that is a hybrid between several aquatic animals with an emphasis on deep-sea fishes. Gather reference images – for this project, I went for images of viperfish, anglerfish, squid, sea snakes, whales and prehistoric sea creatures as well as reading articles about recently discovered species. When gathering animal reference images it's worth visiting sites such as **thefeaturedcreature.com**. Along with a large database, it is updated weekly with images and scientific information about bizarre, beautiful and recently discovered species of the animal world. Compile your image references and print them out so you don't have to repeatedly load them up while working.

02 Start designing It's the head that will define the whole character, so let's start working on this first. To make our beast look more aggressive, double his lower jaw into an inner and an outer one. We can also add four individually sized eyes on each side. Based on the anglerfish, we want to give him fluorescent tips that illuminate his face. This will help to draw the viewer's eye to the creature's head in the final image. To support the transformation from a rather humanoid upper chest into a whale-like design, let the limbs morph into fins as they go down the body. In order to add more continuity and consistency to the overall design, make the tips of the large back fins elongate until they become long tentacles.

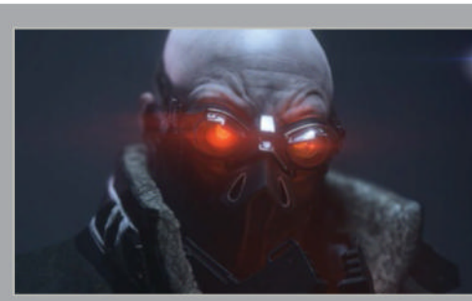
Keep it simple

When learning how to sculpt or draw a skull, a general idea is to break it down into simple planes and primitive shapes. It's worth referring to Eliot Goldfinger's *Human Anatomy for Artists* to look for examples of this. Tweaking the proportions and silhouette of the design is also an easier task when dealing with simpler shapes. Applying this process to your designs is important to make even the most bizarre-looking creatures easy to read and acceptable to the human eye. The ways that I check design readability are by squinting my eyes and blurring the image, or having a copy of the viewport window that shows the model from a greater distance.

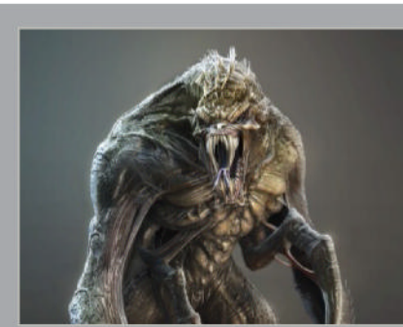
03 Work on overall shape When combining your varied sea creature reference elements into an overall form, make sure that the Leviathan looks convincing for life in its habitat. When straightening the body from tip to tail, the overall shape still has to be dynamic and functional for proper swimming. Check the image for step 3 supplied with the disc – it shows the straight body from a top view and compares the detailed body with a blurred version. You can see that even with its enormous size and complexity, the shapes of the creature can be broken down into a simple fish. This is important for readability and therefore a believable design.

Artist Showcase

Benjamin Erdt
I'm a professional character artist working at Guerrilla Games in Amsterdam with a focus on next-gen game characters. I have been fascinated by science fiction universes and fantasy movie creatures since I was a child, so I trained myself in CG art so that I could make my own. Here are two other projects that I have invested a lot of time in recently.



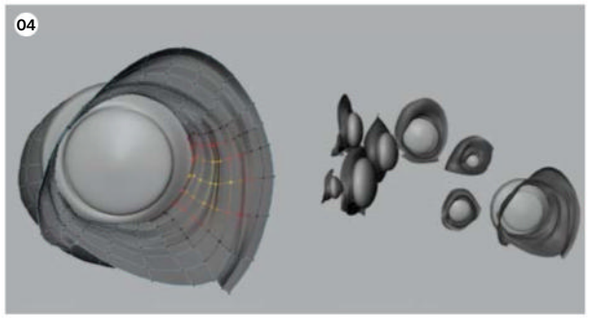
Saric / Killzone: Shadow Fall
2013, Maya, ZBrush, MODO, Photoshop
For the videogame *Killzone: Shadow Fall* I worked on Saric's head, creating the high-poly, game mesh and textures.



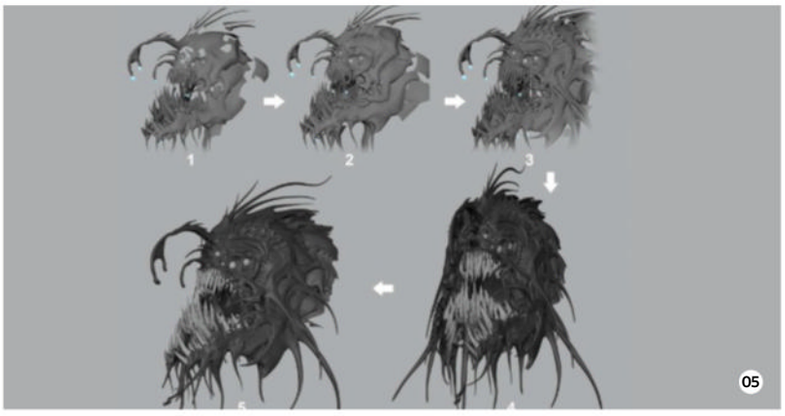
Monster Concept
2013, Maya, ZBrush, Photoshop
One of the monsters that managed to make it from my sketchbook into a final 3D render.

Model the creature

Start building the beast's head and model the body shape

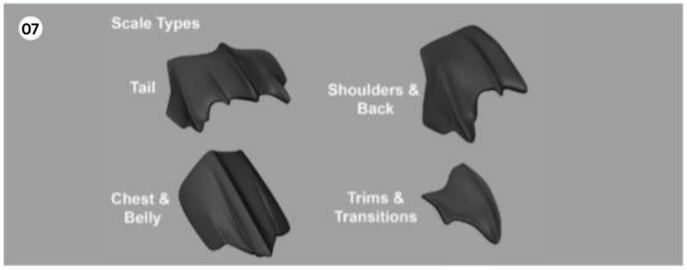


04 Model the eyes Most of my creature projects start with the head, as it is the most important part of the figure. The best place to start is with the eyes. My reference for the look of the eyes was the prehistoric fish known as Xiphactinus. Using Maya, create a PolySphere for the fish eye, flatten it a bit and start building the eye socket around it with standard polygon modelling techniques. Starting with a single polygon, work your way around the eye by extruding edges, adding edge loops, cutting faces as well as pulling and pushing components into shape. Repeat this process for each of the eyes. Keeping the eye sockets separate will make it easier to tweak their relative positions.



05 Develop the head The head is obviously very complex, so we need to spend a good deal of time tweaking to make it accurate. We should start by blocking out the parts that contribute the most to the overall shapes and silhouette. In this case these are the eyes, the glowing antennas, the placeholders where the scales will be, the tentacles surrounding the head, the teeth, the jaw lines and the basic layering of the skin around the cheeks. Keeping these parts separate makes it easier to adjust the silhouette. Once we're happy with the silhouette and shapes, fill in the spaces in between and stitch the parts together.

06 Create the body and limbs The body is created in much the same way as the head by modelling very rough representations of the features. Lay down the basic foundation for shapes, silhouette and volume. Once the correct proportions are established, continue adding more definition and detail. From time to time we should take a break from working so that we can look at it with fresh eyes when we come back. This helps to spot any proportional issues.

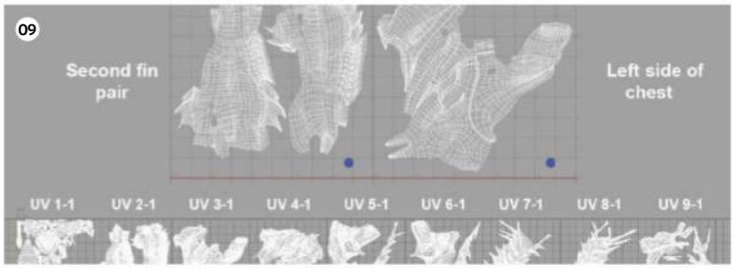


07 Add scales Most of the scales are separate objects and are not modelled into the body geometry. By approaching the scales this way, we can give them individual UVs and therefore greater texture resolution and detail. Four different types of scales should be created as a starting point – bigger plate-like scales to go along the tail, medium-sized scales for the back and shoulder area, U-shaped scales going from the chest down to the belly and smaller scales to be used as trims to create a transition to the skin. All of these different scale types should be copied, transformed and tweaked by hand across the body. This is a very time-consuming process, but it will give you the cleanest and best results for both the design and articulation.

Tidy up the scene

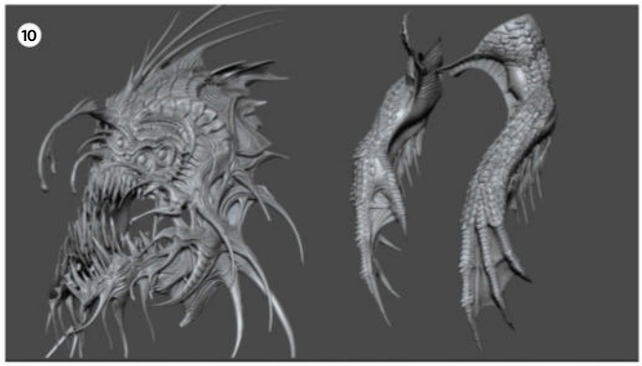
Clean up the scene and import into MODO to create UVs

08 Clean up After the modelling is complete, clean up the scene to prepare it for creating UVs. This includes deleting the history of all objects, snapping their pivot to the world space centre, freezing transforms, checking for flipped normals and deleting unused nodes and empty groups. Naming all objects properly helps to maintain the overview of the model. Proper naming can also reduce issues with scripts that need to iterate through your outliner. After the clean-up process, the entire creature model is organised and ready for export into MODO. The same hierarchy in our outliner is going to be the folder structure for the OBJ files. Each OBJ file has the same name it has in Maya to make it easier to rebuild the outliner hierarchy inside the MODO item list.



09 Unwrap in MODO Before creating UVs, think about where we want the texture seams to be and which objects are going to share the same UV space. In my project, I decided to go for a maximum of 4096x4096 texture maps as they have enough density for the targeted render resolution. Larger texture maps would lead to longer loading times and slowdowns while painting. The torso is the largest object and therefore it needs to be split into nine individual UV patches. The scales are packed together with eight to 20 scales in each group, depending on their size. Here a texture resolution of 2048x2048 per group is enough to reach the desired detail level. Once unwrapped and imported back into Maya, the Leviathan model is ready for the next step.

10 Sculpt finer details Use ZBrush to sculpt surface details. Each OBJ of the creature model will be imported as a separate SubTool into ZBrush. For objects like the torso, which has multiple UV patches, use the UV Groups option in the Polygroups palette to assign a Polygroup to the parts of the mesh that share the same UV patch. This is important for baking Displacement maps. The brushes that I frequently used for the model were the Standard brush, Clay brush, the Slash brushes, Dam Standard and Inflate. To keep sculpted details consistent, stick with one type of detail and finish it on all parts I before introducing new detail patterns. In areas where the pre-modelled scales needed to blend smoothly with the underlying skin, sculpt in scales to create the desired transition.

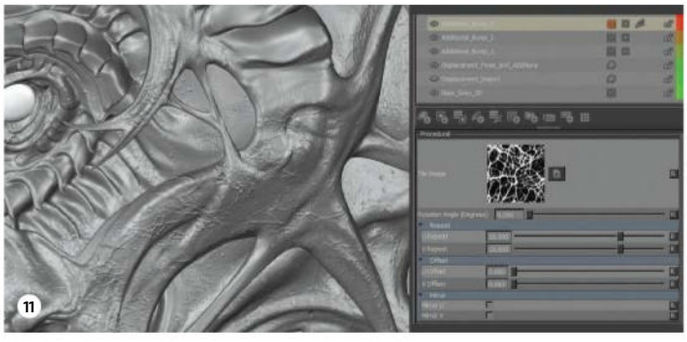


Stay organised, stay clean

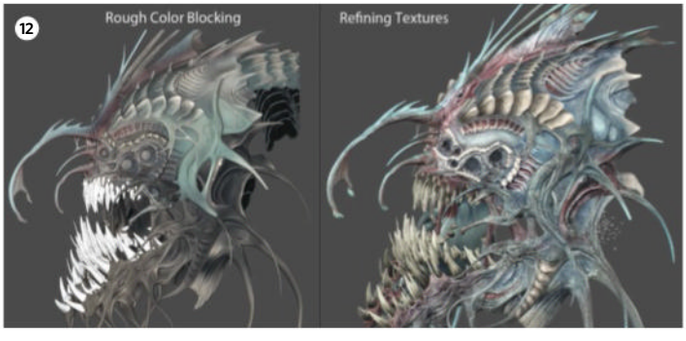
When working on a large project like the Leviathan, think about what could be done in advance to stay organised in the later stages. Before creating any polygons, start thinking about the targeted geometry resolution, which pieces are going to be separate, which parts are visually more important for the later render and which need extra attention. During the modelling process we'll be working towards these specifications. Having a proper naming convention is helpful to maintain the overview of the scene as well as the project folder and to quickly track down objects that may cause errors. It also makes it easier to transfer objects between applications and ensures a smooth texturing workflow for the 100+ parts that the model is built out of.

Texture painting

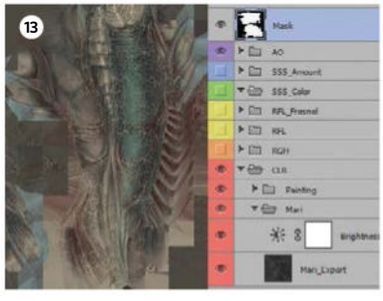
Use maps and layers to texture the Leviathan



11 Create additional Bump maps The Displacement maps provide the necessary detail pattern and density when looking at the model from a distance. To visually support the huge size of the creature with an appropriate detail hierarchy, it's worth adding a Fine Detail layer on top using additional Bump maps. When zooming in closer to the creature's body, the Bump maps reveal the little details like pores, barnacles, wrinkles and other patterns. First, create a set of tiled grey scale maps using Photoshop. In MARI 2.5, the Tiled Procedural layer should be used to spread the maps across the model. By painting on the layer mask we can control the strength and visibility of the details. This process was used to create five different types of skin detail, which were then combined into one Bump map.



12 Block out colour After importing the creature into MARI and setting up all shaders and layer stacks, begin roughly blocking out the basic colours for the creature. As the beginning of this texturing process is very experimental, don't use more than three different colours. The goal is to find a fitting colour scheme, pattern and hierarchy. Instead of painting on empty layers, use colour constants with masks. Along with MARI's masking and adjustment stacks, the colour blocking process will become very flexible and less destructive. Once satisfied with the basic layers, move on to the next level of detail. We'll work with the tones of the existing colours and use a variety of organic brushes and MARI's procedural layers to add more variation to the skin and to blend between different colours and patterns.



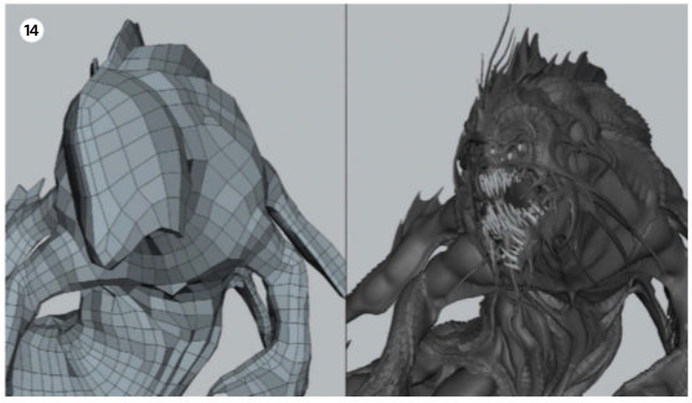
13 Take it into Photoshop For final texture edits and creating maps like Roughness, Reflection and SSS layers, set up a PSD work file for each piece of the model. The image to the left shows the Photoshop hierarchy of one of the arm textures. The MARI pass is the base, while all additional texture edits are added on top in a group called Painting. Use the previously generated Bump maps as masks for more texture detail. To bring back details of the high-res sculpt, generate a Fine Cavity map in ZBrush and blend it lightly on top of the Diffuse.

Cavity maps

In order to have a guide while texture painting and so that you can bring some detail back into the individual textures, create a Fine Cavity map in ZBrush. Choose the stock ZBrush MatCap SketchShade4 and import the particular Displacement map as an Alpha. By using the Crop and Fill Function (Alpha>Transfer> CropAndFill), ZBrush will generate a flat map based on the height information of the Displacement map and the MatCap. This method tends to work best if the Displacement map is configured to have around 50% grey as no displacement.

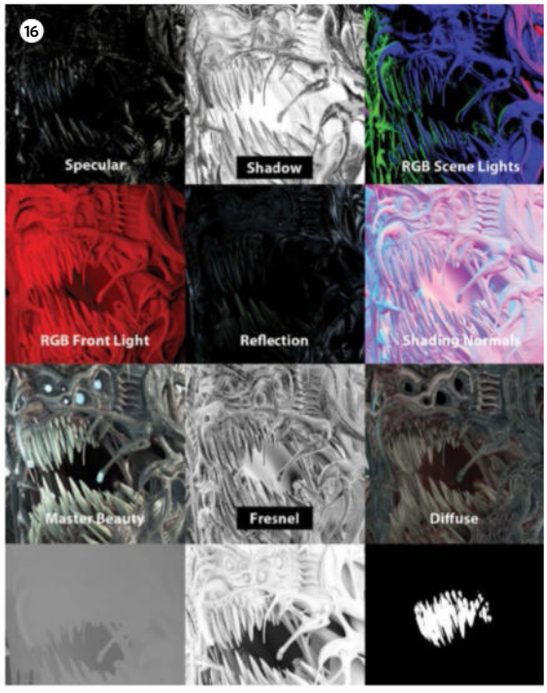
Final rendering

Pose and render the final composition



14 Pose the creature We'll now create a low-resolution representation of the model to be used as a rig mesh and as a driver of the high-resolution geometry. This will make posing a lot faster as we won't have to deform a multimillion polygon model. After posing the low-res mesh, switch to the high-res geometry to see the results. The rig consists of a simple FK driven joint hierarchy, which is sufficient enough to pose the Leviathan for the render scene. Once happy with the pose, export all objects into MODO using a Batch Export script. In MODO, polish the pose by fixing deformation issues and distortions caused by the skin weights of the rig. For this task, MODO's Sculpting tools will come in handy.

15 Set the scene in MODO The model consists of 100 parts. Each has its own material, which is named after the object it's assigned to. This helps to control the overview of the large Shader Tree. Before loading in any Diffuse, Roughness, Reflection or other maps, do some test renders to check the Displacement and Bump maps. Regions with UV seams need extra attention as they can cause artefacts when displacing, or show cuts in the Bump or Normal maps. Once the Displacement and Bump maps render cleanly, continue adding other texture maps. For lighting, use an HDRI to provide the lighting information of an ocean storm scenario. To create the rim light effects on the creature's left side, add an area light at the appropriate position. Another area light can be added to emphasise the specular highlights caused by lightning.



16 Render passes When working on the final composition, it's important to be able to edit individual objects through masks, so you can adjust highlights, reflection and depth, or tweak intensity and brightness of each light. To gain full control over the final image, render out a number of passes. Next to the standard ones like Beauty and Depth, render a pass for RGB Lights, Object Space Normals, Reflection, Specular, Shadows, RGB Masks, Fresnel and fine AO. By disabling the Bump maps, we'll render an additional Specular pass of the highlights only caused by the Displacement maps. This enables us to adjust the bigger highlights of the skin and scales. The image above shows some of the passes I rendered for the final composition.

17 Tweak the final composition Using the previously rendered passes and adjustment layers for colour correction like Brightness/Contrast, Color Balance, Hue/Saturation, Curves and Levels, we'll end up with a base version of the composed image. This is going to be the starting point for the final touches in Photoshop. The background is based on Cloud layers in combination with Custom Cloud brushes. For the water splashes, experiment with different types of Noise layers as well as Water brushes. Render passes allow for a lot of experimentation when creating effects and tweaking the image. The Depth pass can be used to create a depth of field effect or as a mask for a Saturation adjustment layer. The fluorescent lights can be used to draw the viewer's eye to the face, as they are the only objects with a glowing turquoise colour. Flipping the image horizontally from time to time is a good way to refresh the eyes and to spot composition issues.

Conclusion

Working on a project of this scale can be a challenge, but it's good training as it covers many disciplines of the design process, from modelling, sculpting and texture painting to shading, lighting and rendering. Breaking this project down into smaller steps made it easier to plan and was more feasible.

Create a furry creature concept

Photoshop ZBrush

The Wanderer 2015

Create a unique character design and build fur using ZBrush

In this project we are going to explore the workflow and method used to create a Lost Creature. We will be making this creature to help us make a central character as part of an illustration. This is an imaginary Lost Creature wandering the wild. The idea was to capture a moment in the life of this furry character, showing his curious and friendly side.

A challenging thing about designing a character is to make it appealing, memorable and believable. As we sculpt this creature, we'll make aesthetic decisions to give personality to our character.

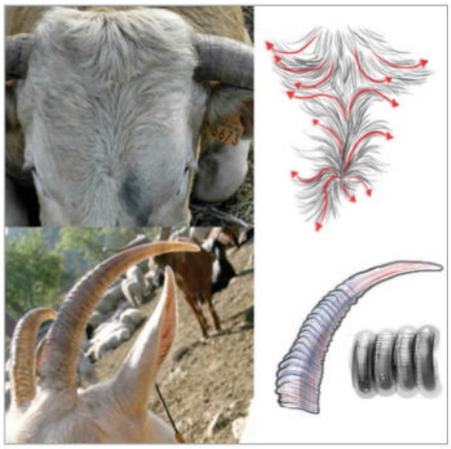
Based on a rough 2D sketch and using ZSpheres, we'll quickly build a versatile base model of the creature. This will enable us to refine the character's silhouette and proportions using layers. We'll focus on setting up the model for FiberMesh and explain a few techniques for getting some control over the creation and grooming of the fibres.

Along with a series of sculpting tips, you'll learn to tweak and groom different groups of fibres to further help you explore the design through the way the hair is shaped and placed on the model.

ZBrush will be the primary software we are using in this tutorial, for the concept, sculpting, texturing and rendering. We'll also use a bit of Photoshop for the initial sketches as well as for the final composition.

Initial concepts

From rough ideas to designing the model



01 Design with a story Regardless of the nature of your project, it is always important to gather references to help you visualise the idea. These references could also inspire you to develop the story behind your character, or they might suggest the imaginary world that the character lives in. This Lost Creature doesn't have a narrative or a story behind it, but you can create 'facts' about the species or clan, for instance. These facts could help you narrow down some design elements to make it a believable character, for example we can say that this is 'a social creature, but it's hostile to individuals of the same group, innocent, gullible and easily distracted'.

02 Iteration and the exploration of ideas Some initial sketches will help you visualise a bit better, whether you want to pursue the original idea or not. Let's start by drawing a few thumbnails to capture the main elements that you want to include, for example: big heavy horns probably place the creature high in the social hierarchy and suggests a certain age. Long arms and short legs suggests that he is not very fast, and he is slightly hunched over due to the weight of his horns. You could also do a collage with the references you collected to help you lock the forms, materials, transitions and so on.

Artist Info

Pablo Muñoz Gómez

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Country **Ukraine**

Software used **MZBrush, 3ds Max, MODO, Fusion 360, Photoshop, KeyShot**

Learn how to

- ☑ Design with a story
- ☑ Explore silhouettes in ZBrush
- ☑ Tweak character proportions with ZSpheres layers
- ☑ Polypaint for FiberMesh
- ☑ Edit and groom FiberMesh
- ☑ Set up realistic fur for a full-body character
- ☑ Group FiberMesh for more control over the grooming
- ☑ Pose the character
- ☑ Render multiple passes and combine them in Photoshop

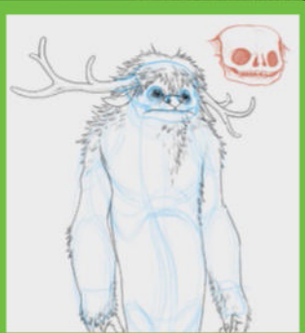
Fine-tuning silhouettes with layers

An interesting way to explore the proportions of the character and the overall shape of it is to use ZSpheres with layers. You could start by creating a fairly average armature (by turning symmetry on). Then add a new layer in the same way you would for any subtool. Start rotating the limbs and scaling the ZSpheres until you're happy with the new silhouette. Add a new layer for a new idea and keep exploring shapes. Once you have a few variations, go to the layers subpalette and start playing with the sliders to blend the variations in order to get even more options.

Render a furry creature concept

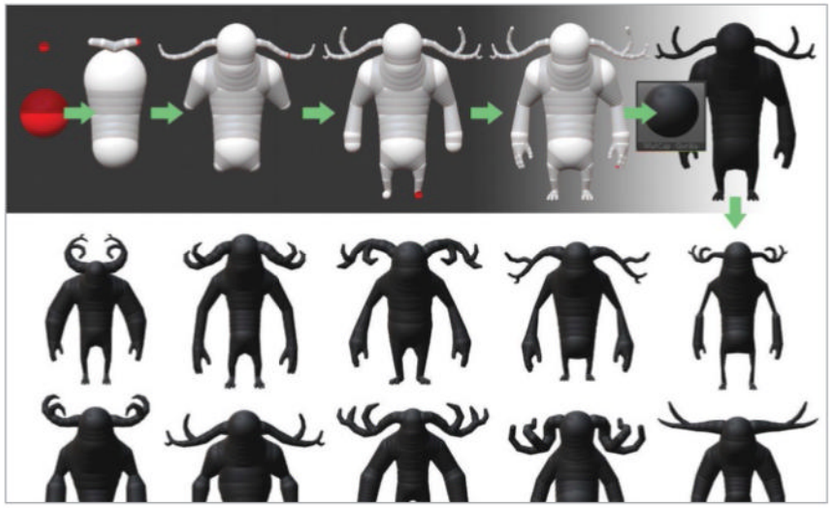
Concept

This creature is catalogued as one of the most social subspecies of the Lost Creatures. However, their interaction is restricted to other species as they are hostile to individuals of the same group.

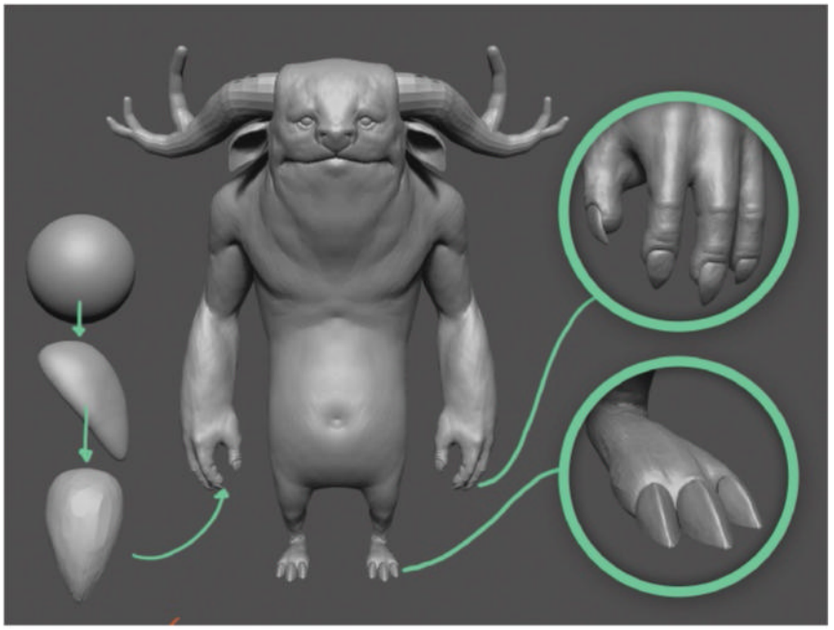


Model the creature

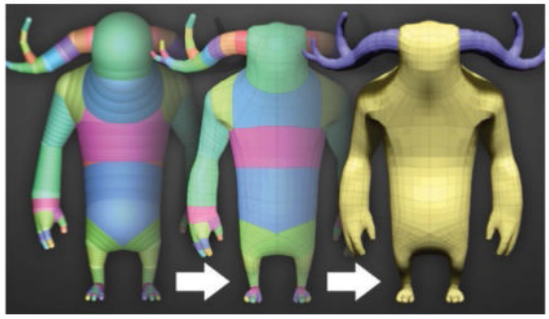
Start building the beast's head and model the body shape



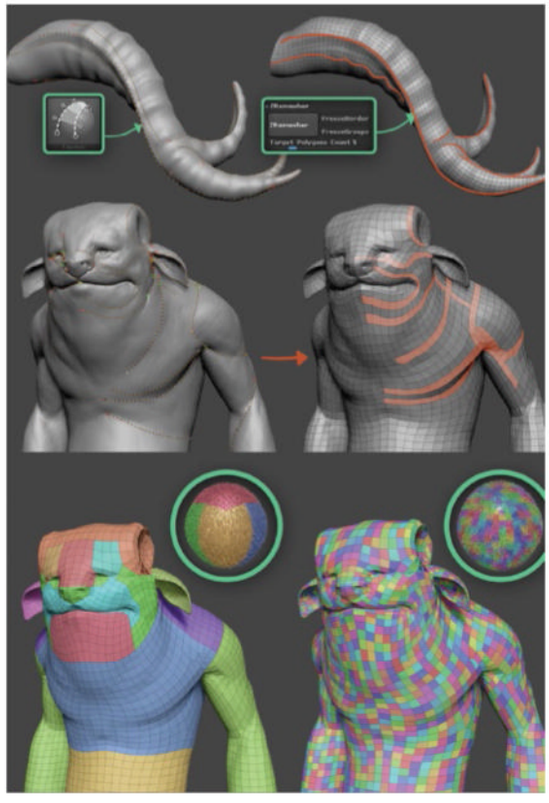
03 Ground your design Once you have created a few thumbnails and sketches, open up ZBrush to continue the design process. One of the advantages of designing within ZBrush or any 3D application is that you can quickly evaluate your design from every angle, so we'll use ZBrush ZSpheres to play with the character's proportions. A quick armature done with ZSpheres and a dark MatCap can help you to easily create numerous variations of the character's silhouette by rotating, scaling and moving the spheres. You can also make use of Shift+S to drop copies on the canvas and save a document with all of your silhouettes.



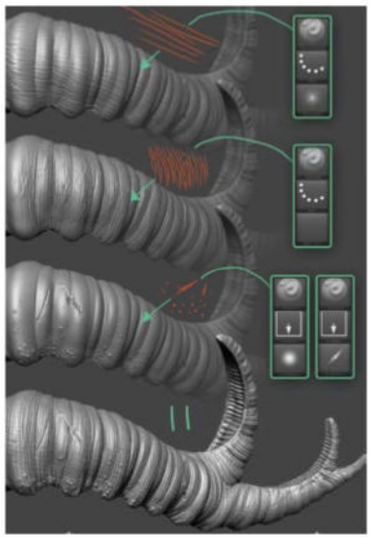
05 Refine in low resolution and add details Since most of this character is going to be covered by fur, we need to exaggerate some volumes to avoid losing the desired contour when we add the fibres. A combination of ClayBuildup, Inflate and Smooth is ideal for this part of the process. Try to avoid doing too many details at this stage and keep the size of the brush large, this will let you focus on large areas and block out a nice character profile. You can also use Dam_Standard to roughly mark some key areas of the model like the eyes, nose and mouth or any other anatomy landmarks. Now we will actually work on the details: add the character's eyes and claws by appending spheres and shaping them, and then go over the model and refine the forms. Keep in mind that most areas will be covered by fur, so concentrate on the parts of the body that are going to be exposed such as the eyes, nose and – especially – the horns. If you think about your model as a composition, you can follow certain principles that could make your design stand out – contrast, lines of actions, balance and so on. In this case, the horns are a vital design element in this character's composition, so they need special attention.



04 From armature to 3D sketch Next step is to choose one of the armature's silhouettes to work on. Nothing is set in stone, but at this point it would be good to add a bit of structure to the design to build a solid base for the character. With the chosen armature, create an adaptive skin (one for the body and one for the horns) and DynaMesh them. Try limiting yourself to only using the Move brush for now to break some of the obvious spherical volumes from the adaptive skin. The Topology Move brush is also very handy in areas such as the fingers or where the arm gets closer to the chest.

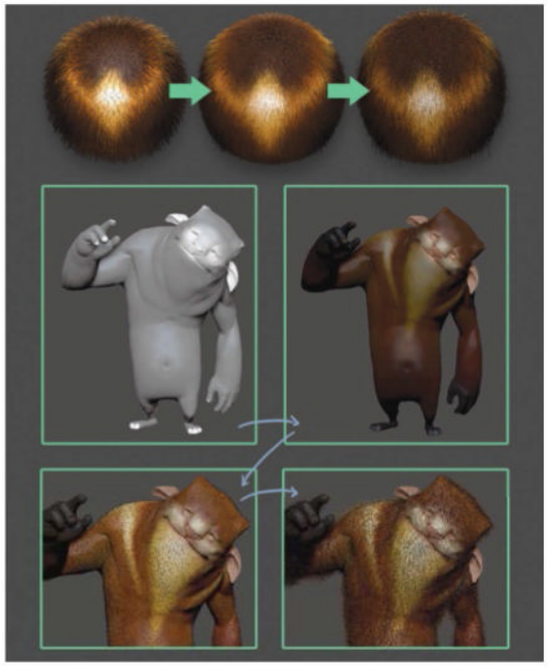


06 Grouping This is a key step when using FiberMesh, not only because it gives us control over the hair creation but also the grooming. We'll use the ZRemesherGuides brush to draw a few guidelines that ZRemesher will use to arrange the polygons and build a cleaner model. When the retopology process is done, duplicate the new model. We'll subdivide and group one mesh to project the details from the sketch, and the other one to group each polygon individually. When each polygon on the model has its own group, the fibres created will maintain the grouping, giving you more control once you start stylising the hair.



07 Polish and Polypaint At this point the setup of the model is complete, so it's time to polish the surfaces and add some extra details. By using layers, you can create intricate effects and have full control over the contribution of the details of each layer. Take the horns for instance; in one layer we've sculpted deep vertical crevices and in the second layer we have horizontal indentations that run from the base to the tip. Using the layer weight sliders, you can blend the effect for each set of details to create a balanced pattern. You could use alphas to add further details like bumps and wrinkles where the hair won't grow. Use colour to reinforce your design, to guide the viewer, or simply, to frame a point of interest. The Polypaint on this creature is almost a gradient that goes from yellow to black, creating a vignette effect and adding focus to the face. FiberMesh can grow the hair with colour using Base Colorize. At a value of one, ZBrush will sample the Polypaint information from the model to tint the fibres. This will give you greater control and the result will look far more interesting. Keep in mind that the fibres will create the effect of blurring the transition between different colours, especially for messy hair.

08 Add character with the pose Posing a character is another powerful opportunity to reinforce its personality. Take advantage of the original armature to quickly try out some poses, so you can get something that expresses exactly what you want. In this case the final pose is rather simple, but it helps to portray the innocence and curiosity of the creature. Since we have multiple tools, the Transpose Master plugin would be the obvious choice and because of the manual grouping we did earlier on, you can mask or hide areas quickly. Also, consider how the shapes and volumes can help you with the composition.



09 FiberMesh first pass In most cases, you'll fneed a large amount of fibres to achieve the desired effect. A good idea is to generate some fibres from a simple sphere, and tweak the settings until you are happy with how they look. Then you can save the settings and use them in the posed model but with a higher number of fibres. For the first pass, mask everything except the areas that won't have hair and preview the fibres with your saved settings. This first pass should cover the entire body and have the hair spread evenly.

10 FibreMesh blocking The second pass consists of using the grouped areas to separately grow blocks of fur. Start with big groups like the chest and back to set the maximum number of fibres, as you move to smaller groups gradually reduce the number of fibres to keep the hair amount consistent across the character. In some areas the difference in hair length is quite obvious. For example, the short hair on the hand is next to the longer hair of the forearm; we'll need to create a transition from long to short by masking the wrist region and tweaking FibreMesh for a more gradual change.

11 Extra fibres and retouching the hairstyle For the third pass we'll use the copied model we created earlier. Mask areas where you want slightly longer hair and create the fibres, press Shift+F and you'll see that each polygon produces a grouped set of hair. Select GroomSpike and turn 'Mask By Polygroup' to 100, this way you will affect only the fibres that share the same group, making it easy to create clumpy spikes of long hair. Remember that FiberMesh previews are very different from the render so try to do quick BPRs to make sure all fibres are looking good, especially after grooming. The Move tool is great for editing FiberMesh: use it to reposition chunks of hair or to push some hair inside the model to hide them (this is useful around the mouth or the eyes). Be careful when using the Smooth brush because it could make the fibres too thin.

13 Document, quality and camera While sculpting, a small canvas document is more efficient and ideal for testing the render passes. To set up the document for the final render, though, we need to set the right dimensions and increase the size. The next step is to frame the model roughly to where you want it and tweak the 'Angle of View', this will flatten or exaggerate the perspective. We'll use ZAppLink to store the render view – this is an essential step in case you accidentally rotate the model. Finally, increase the antialiasing quality by changing the SPix (SubPixel) to a value of seven.

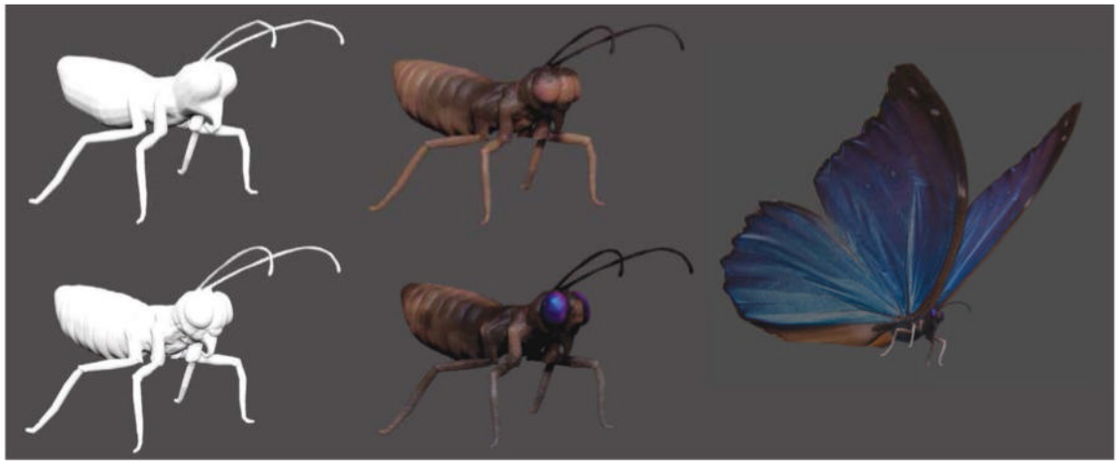
AutoGroup by normals

With a low-res version of your model, assign a different polygroup to each polygon. The advantage of this is that FiberMesh will assign groups to fibres created based on the underlying surface. Each polygon will produce a unique group of fibres. You can use any Grooming brush with 'Mask by Polygroup' at a value of 100 to control fibre groups individually. Group quickly by using 'Group By Normals' with a 'Maximum Angle Tolerance' of 1.

> Creating the butterfly is quite simple and similar to how the creature was built: we started with a ZSpheres armature and created an adaptive skin to sculpt some details, then we added Polypaint layers to the body

12 Materials and lighting We are going to keep the materials for the render quite simple and just render a couple of extra passes with MatCaps. The body, horns and fibres have slightly different versions of SkinShade4 with variations in the specular value and the wax strength. The lighting is a three-point setup with a key, a rim and a fill light. You can create a LightCap but in this case three lights would make the process of rendering passes much easier since we can quickly toggle the visibility and influence of each light.

14 Render passes With the document ready, we'll start generating the render passes. Sometimes it might be difficult to decide which passes to render, so start with the basics and if you need more, or want to test something different, go back to ZBrush and create new renders. The basic passes will vary depending on what style or type of illustration you are after; for this creature we need at least a beauty, shadow, mask and depth pass. Additionally, we'll render an AO pass, reflection pass (MatCap Satin01) and flat colour pass (Flat Color). Finally, we will turn all Polypaint off and render each light individually with shadows.



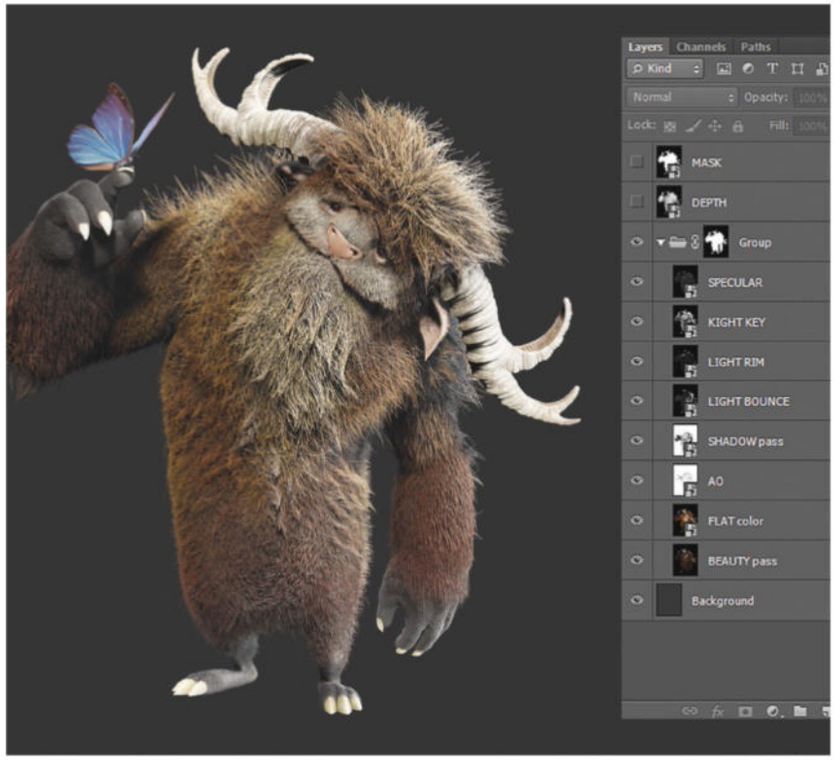
Colour FiberMesh

An alternative way of adding colour to the fibres is to manually Polypaint them. You can also use this technique to further tweak the colours of fibres already created. Turn ZAdd off and Rgb on, and by using the Standard brush with the 'Mask By FiberMesh' feature in the masking options, you can paint portions of each fibre.

15 Point of interest The butterfly was something that came up while posing the character to add an additional point of interest and as an element to support the action suggested by the pose. Creating the butterfly is quite simple and similar to how the creature was built: we started with a ZSpheres armature and created an adaptive skin to sculpt some details, then we added Polypaint layers to the body. The wings are planes with UVs using an image texture of a wing on a black background that, if enabled, ZBrush interprets as transparency. Then you can use Transpose Master to position the butterfly.

> It might be difficult to decide which passes to render, so start with the basics and if you need more, go back to ZBrush and create new renders

16 Composite To combine the different passes, use Photoshop. Import your passes and name them, we'll put the depth pass and mask at the top of the Layers stack and hide them. The rest of the render passes can be added to one group, and we can mask the whole group with the mask render pass so that we are able to see the background. With the beauty or colour pass at the bottom, change the Blending Mode of the shadows and the AO to multiply and tweak the opacity. For the light passes, change the Blending Mode to Screen or Add, or use them as masks for new layers to have full control over the colour and intensity of each light.



17 Final tweaks Use the Adjustment layers in Photoshop for a nondestructive way to edit a layer. Create level adjustments and place it at the top of the rim light pass; holding Opt/Alt, click in-between the two layers to clip the effect to that single layer. Now you can adjust the contrast and intensity without affecting the original pass. To add a photographic effect, use depth pass as a mask and add a lens blur for a depth-of-field effect.

Learn how to

- ☑ Sculpt hard surfaces
- ☑ Work with retopology
- ☑ Use an advanced Boolean workflow
- ☑ Set up rendering
- ☑ Work in postproduction with your render

Artist Info

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Personal portfolio site **www.art-grizzly.tumblr.com**
Country **Ukraine**
Software used **MZBrush, 3ds Max, MODO, Fusion 360, Photoshop, KeyShot**

Construct a luminescent, high-gloss mech wolf

Mech Wolf 2015

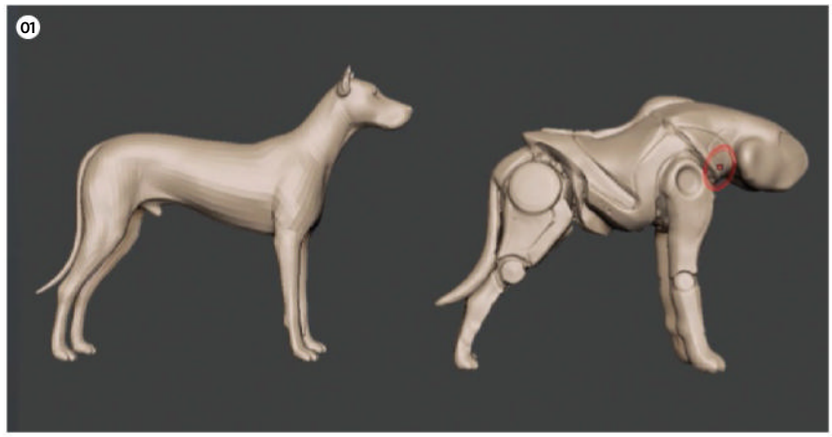
Use ZBrush, 3ds Max and more to render a luminescent, Eighties-style mech creature

The main idea in this mech wolf tutorial is to understand key steps of a 3D concept production and develop a really fresh look for your model. We will lead you through a creative and natural 3D sculpting process in the first part of the tutorial. After that we will show you how to quickly create stunning details using next-gen Booleans with MeshFusion. The last part is dedicated only to the visual development. We will find a unique look for your mech using inspiring references and then using Photoshop, we will do some stunning postproduction work – repainting our reflections and adding smart accents to our final composition. We will explain which workflows will suit which parts best, whilst still staying loose by switching to different packages to apply their best features. Download the tutorial files from **filesilo.co.uk/bks-890**.

Find the balance between shapes

Begin with a dog base mesh

01 Block-in stage We've started using a dog base mesh because we wanted to retain the basic anatomy and gestures. We should spend more time on tweaking proportions so that they're closer to a wolf than a dog. Picking the Move brush and pressing the V key allows ZBrush to show a black silhouette for you to adjust as you please.

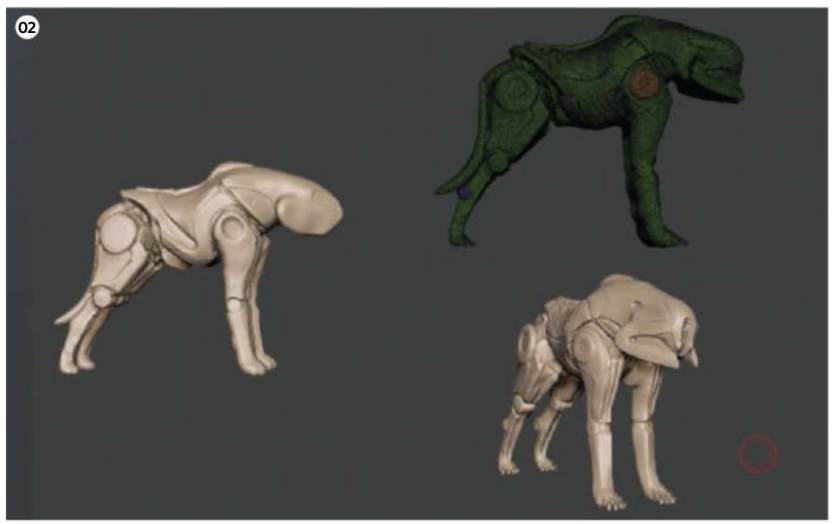


02 Major shapes The main idea is to develop nice big shapes and then find a balance between them.

Try to find a key curve that defines the flow of the design. Dam_Standard combined with the FormSoft brush is a perfect solution for us. The big joints were done using the InsertCyl brush and of course all of these are separate DynaMesh parts with different polygroups. This means we have a lot of control over the design in general. Our main workflow idea is to stay as freehand as possible in the sketch stage so the idea is to not use Alpha or kitbashed parts.

Be smart

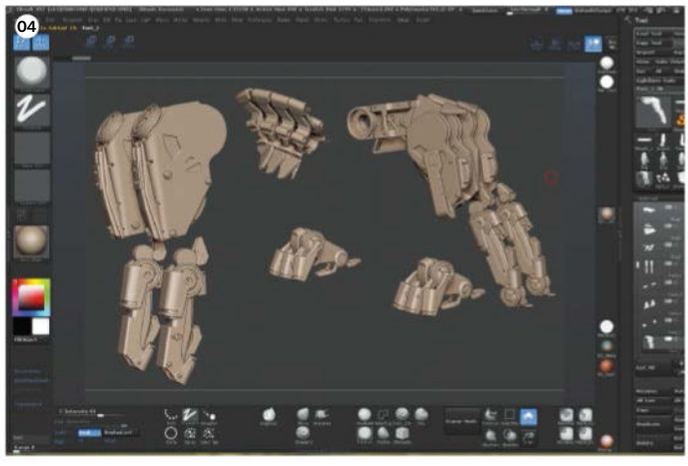
Find the best base mesh you can. It is a real time-saver for you. Feel the curves of whatever real-world object you are using and stick with them in your final design. Build your design along the hard points so that you are able to follow main joints, limbs and structures when doing hard body design. Also it is a good idea to find a good material and implement it even in the beginning stages. These tips are important for creating believable artwork.



03 Define the upper body Isolate the upper body of the wolf and try to work on making each part more accurate. This is the right time to find good references. Choose as many mech ideas as you can and find the feel you want to achieve. Remember that you live in a world that produces tons of information and the more you get, the better result you can expect in the end. We started with a motorcycle-style frame and soft flowy shapes that begin at the wolf's jaw. Try to follow the main line and cut the lines in a kind of rhythm.

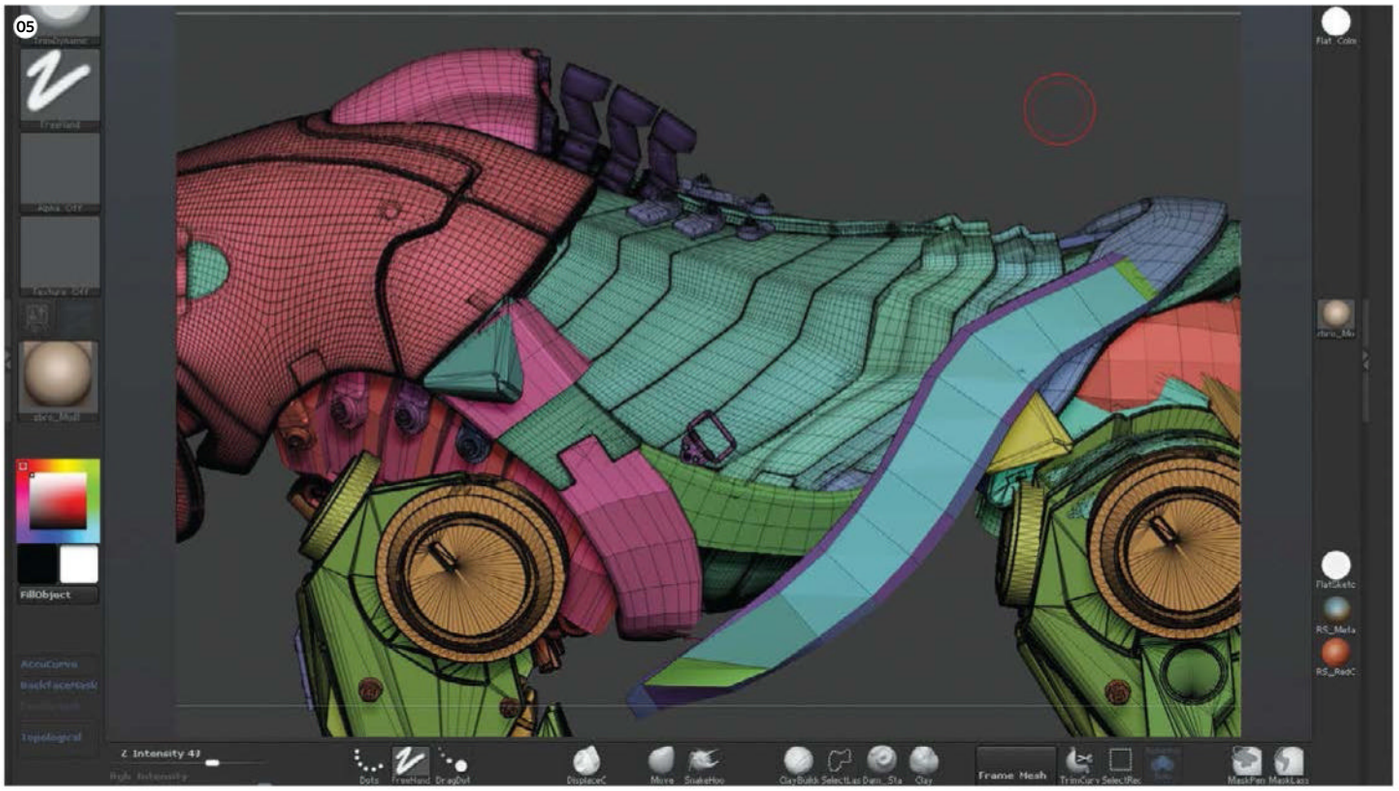
04 Fusion 360 The best solution for a hard-surface tool is Fusion 360. The way it works is so simple and effective; you can spend a few minutes modelling each part compared to several hours using classic modelling tools.

Aim to build useful and unified parts that you can rotate and combine in different ways. We've modelled a simple, thick arc here for this. Now just send it to 3ds Max from Fusion and bash a simple leg. Use Symmetry scale and Edit Poly to bring some variation into your design.

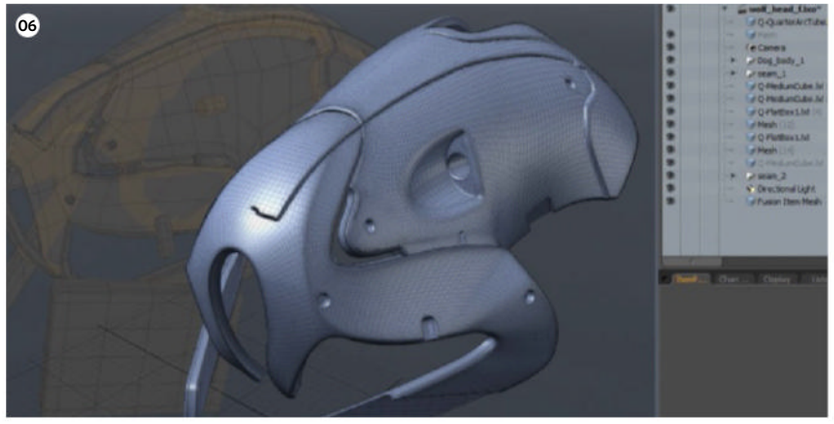


Clean up the image

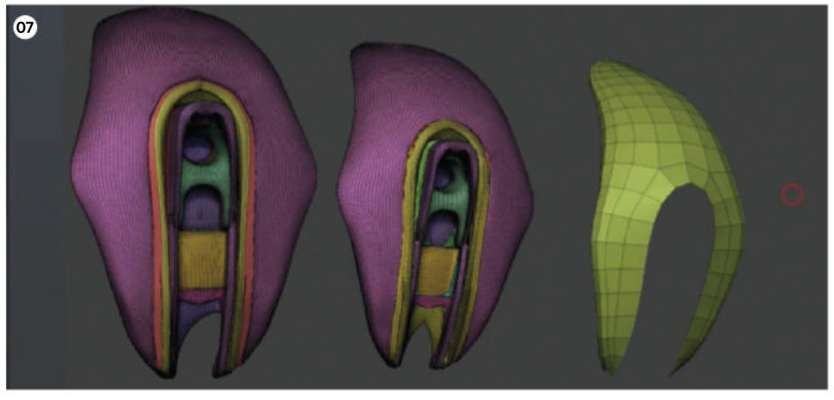
Employ retopology when your design is finished



05 Retopology After the design is finished you may want to clean it up. The main tools we used here are ZRemesher and 3ds Max's retopology functions. Import a decimated sketch to 3ds Max and start defining major topology. Try to keep these as simple as possible by drawing the main curves that are holding the mesh. Try to draw the loop through the whole model so you can control the shape in a clear and logic way. Then add smooth controlling support loops and slide them in. After you finish that stage use GoZ and put everything together. We only care about the look and not the production values here, as we are able to change these later on in Photoshop.



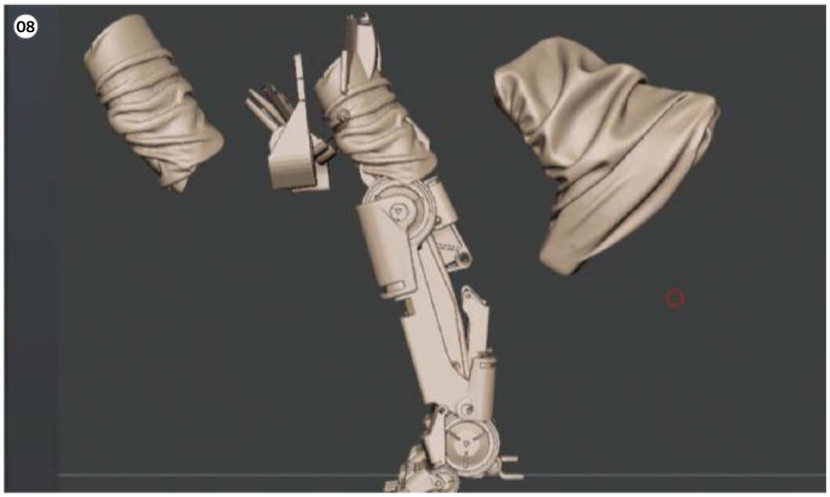
06 Advanced Booleans Problems can happen all the time whenever you are working with minor details and subdivision surfaces – that's when MODO can save you lots of time. Just send the head sketch to 3ds Max and start doing simple retopology while preserving quad structure and big polygons at the same time. We will need this simple topology in MeshFusion because we want a really simple edited wire. So before sending your image to MODO, try to clean everything up. Import the head to MODO and start adding small details using built-in Qbics and drawing custom seams. Set the resolution as low as possible, and this way we will still have an easy-to-manipulate model later.



07 ZRemesher This is a function that is extremley helpful and a great time-saver. Select a sketch part, and slice it into polygroups. Keeping polygroups separate will help ZRemesher to find a nice topology and reduce it to a small poly count. Turn on 'Keep groups', select the ZRemesher Guide brush and apply frame mesh. Start ZRemeshing and once you have basic loops you can try to slice them again. Proceed further to lower your poly count and find a good balance. Then split everything into SubTools and ZRemesh again.

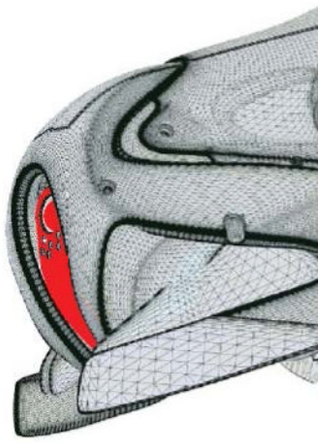
Assemble your mech wolf

Import into 3ds Max and connect the moving parts



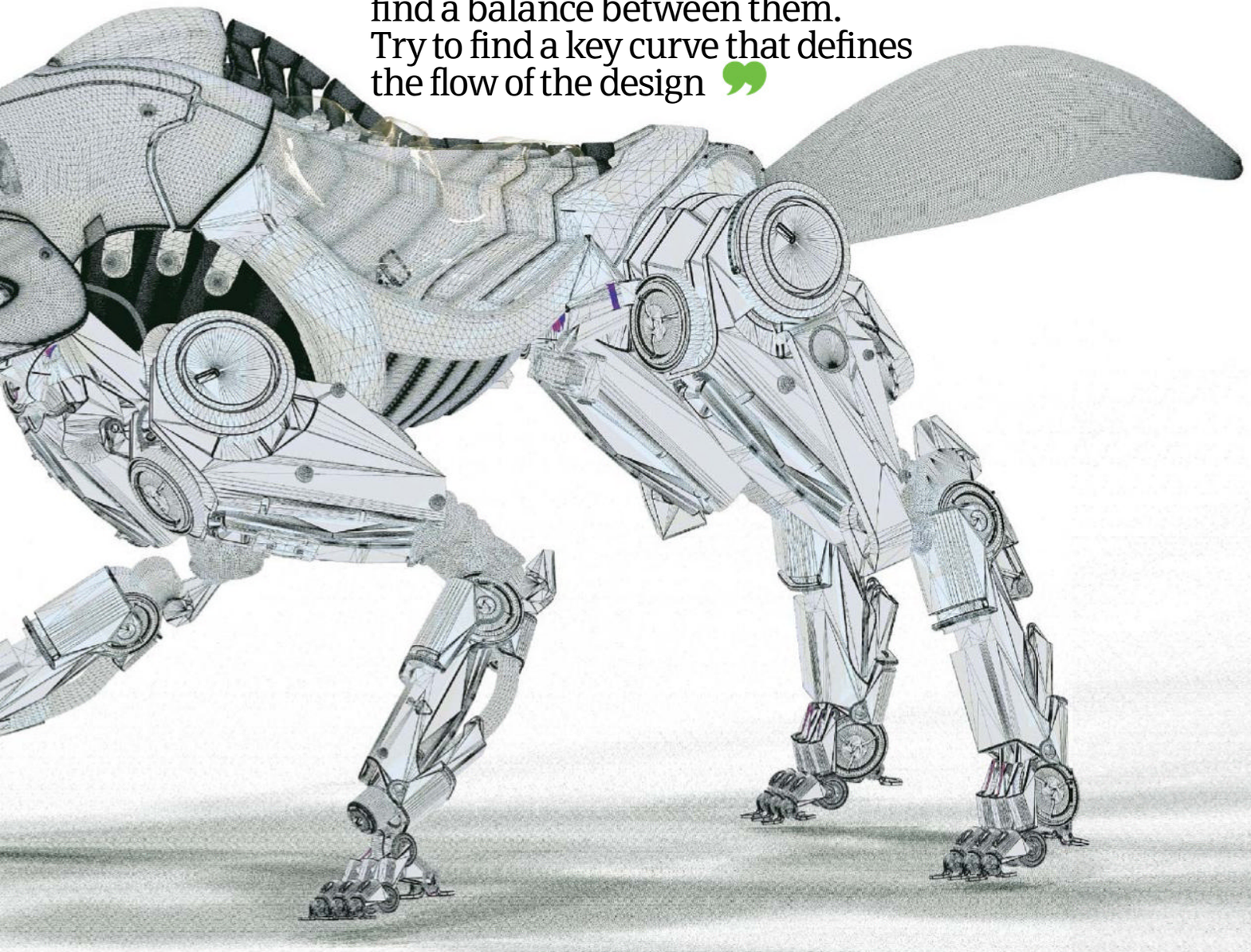
08 Material contrast We want to create different materials to break the design and make some areas that are relaxing for the eyes. We've rushed into Marvelous Designer and chosen a default avatar for this: a simple wrapped cylindrical cloth. After that, import the upper body to Marvelous Designer and wrap it with cloth parts. Set the wire type to Quadrify. The next step is importing into ZBrush. When you are done with importing, press the Dynamic Subdivision button to smooth whole faces. Now we have fully finished parts.

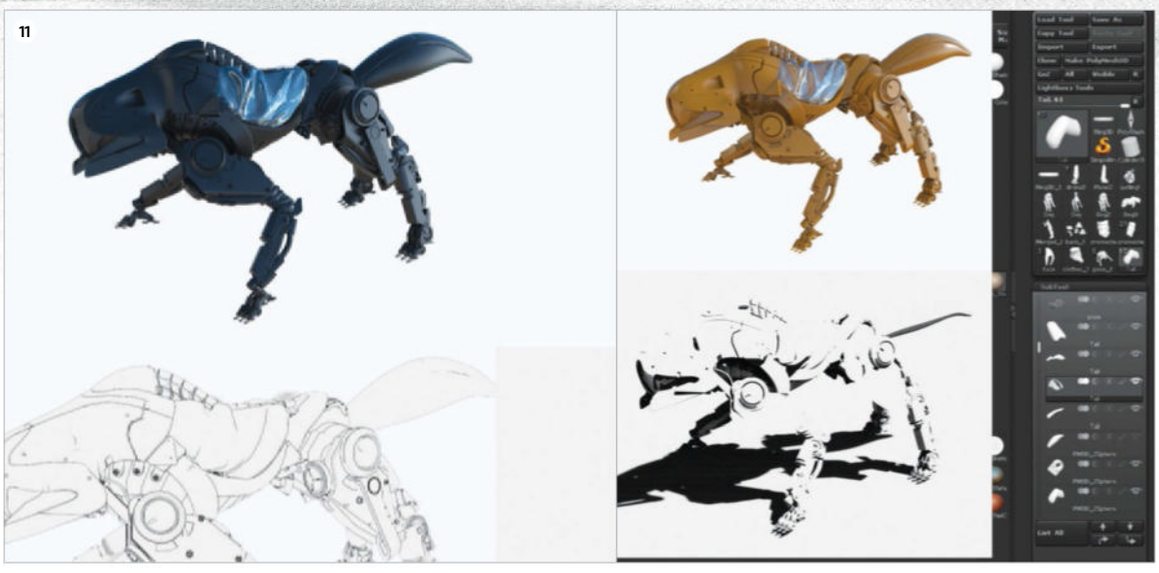
09 Final assembly and posing Import every part into 3ds Max using GoZ. Now use the Link tool on the moving parts, connect them and set every pivot to its logical location. Using only the Move and Rotate tools, pose the wolf. In ZBrush, slightly move and rotate the wolf's head to add small dynamics to the pose.



10 Critique yourself Don't be afraid to kick yourself while looking at your design. We felt a lack of balance in the tail area and sculpted a simple base mesh using ZSphere, converting it to DynaMesh. Next step is to quickly slice this into groups for further ZRemeshing. Add ZModeler touches for the final look and place each part.

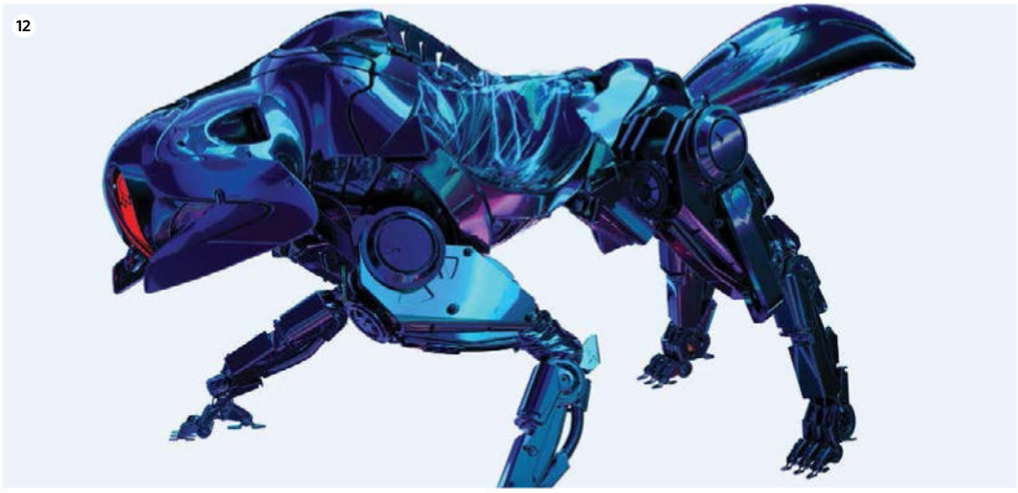
> Develop big nice shapes and find a balance between them. Try to find a key curve that defines the flow of the design





11 Render in KeyShot Always make sure to ask yourself at every stage of your project what you expect at the end of it and what your task was. In terms of rendering, we first sent the files to KeyShot and tried to make a classic hobo robot by combining passes, but we felt that this was not enough originality and we had to look for a fresher look and feel.

12 Retro Eighties look So now we set the HDRI in KeyShot and modified it with an integrated HDRI editor. We placed lights by referring to different pictures found on the Web. We then set a metal material for all the parts and set the cloth as a glass material. The glowing eye is a emissive shader with a simple red colour. Now simply render it.

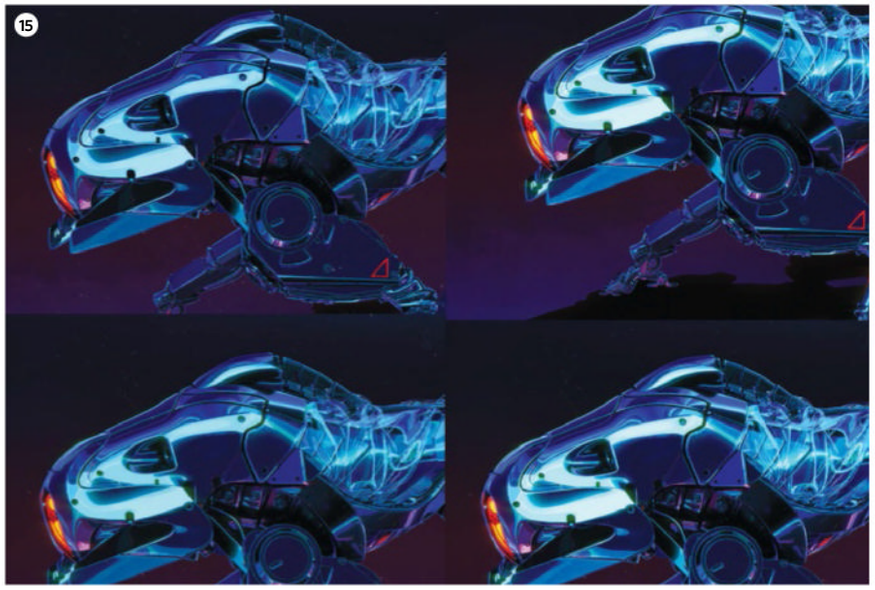


13 Painting Using the render as a guide, select the Gradient Paint brush and repaint every reflection to bring the artistic touch into a 'dead' 3D render and fix issues with surfaces. Find a good colour and place soft highlights to magnify the overall look.

14 Kitbash the design and add FX Now put some more life into the image. The best way to do this is to use a Soft brush and a Color Dodge layer. Slightly paint glow effects on the eye then duplicate the layer. Gaussian blur is a good starting filter, and it is important to follow the eye using colour and value spots on the image. Try to emphasise the feel of light on the image and add depth by controlling the light balance on the image. After that detach some parts from the image and place them in the right spots.

Begin postproduction

Make your render look more realistic



Kitbash as hard as you can

Every time you create artwork you will need to find a balance between speed and quality. It will be good for you if you can dedicate your time to learning new ways for improving your workflow. We are able to communicate through less volumes than vertex manipulations. This way we are able to create bashing kits faster and optimise them for our purposes in less time. Always try to make the kit as simple as possible so it fits in with different environments and styles.

15 Postproduction work in Photoshop The magic in the image usually happens when you are free to add cinematic effects. The Curves command is good to start with to bring the light values. After this, our favourite trick is to use Magic Bullet software. Start with a slight diffusion with colour – it will blur the image much like how a photo taken on a camera would look – and try to put in some really soft bloom effects using atmospheric flares. Painting with the Dodge tool will help to light the background.

16 Deep FX layers This stage means adding dust and scratch textures to the image and it is a very cool trick which helps the render look more realistic and close to a real camera shot. Each texture should be used softly in this way so the viewer will feel more and will believe in the story you are telling with your image.

17 Final details Merge all the layers into a single one. Use lens aberrations as a small colour shifter. Clamp the colour and use a monochromatic noise layer. Take some smoke and paint it as a soft colour dodge or screen layer. Sharpen the image and maybe fix some mistakes manually again. Now you should be finished!

17

Create creature-based action scenes

Monster Versus Hero 2012

Photoshop

How to create a dramatic creature and the human heroes who stand up to it

The first thing you need to do in an effective monster-versus-hero action scene is to flesh out the composition. In order to do that effectively you need to understand the characters and creatures within it. The creature is the eye-catching element of this kind of painting so it's important to have a good idea of what it will look like before you begin. How big is it? Where does it live and what does it eat? Is it diurnal or nocturnal? Is it based on a mythical creature, a prehistoric one like a dinosaur or an extrapolation of a real-world creature? Having answers to these questions will enable you to figure out how your creature should look, move and behave.

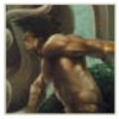
In a scene with a human fighting a monster, we have to ask ourselves why the fight is occurring. And the only way you can tell the reader this is through the stance and behaviour of the two protagonists. Again, figuring out the creature's behaviour before you begin will give the fight a back story and help you enormously. A creature that feeds on human flesh, for example, will be attacking viciously. A shyer, non-predatory creature may be defending itself from human attack instead.

The behaviour of your creature will also give you an insight into the behaviour of your human characters – you'll know whether they're hunting and actively seeking out this beast, or whether they're defending themselves from a ferocious attack. With the basic idea of who your characters and creature are and why they're fighting, you've got the ingredients for a vibrant fantasy piece. You can find all the tutorial files that you will need at **filesilo.co.uk/bks-890**.

Artist Info

Ken Barthelemy

Personal portfolio site **theartofken.com**
Country **Luxembourg**
Software used **Photoshop**
I have been working as a professional freelance artist since 2011 but I started painting when I was able to pick up a pencil. Recently, I worked on the film *The Maze Runner* and sequel *The Scorch Trials*.



Set the scene

Build thumbnails and find references

01 Scribbles Start your scene off by scribbling diverse body parts and creating many thumbnails. You can do this quickly and bring all your spontaneous ideas to the paper. Usually, I use a pencil or a Copic marker for this job. These drawings should be ready in a few minutes or even seconds, so they shouldn't be too detailed.

02 Reference photos In order to create a realistic and plausible effect you should know the anatomy of different animals that may be relevant to your concept. Search the internet or books and look for reference photos of different animals such as alligators or snakes. One thing in particular that these photographs will tell you is what the skin texture of the creature should be like.

03 Pencil sketches Create more detailed pencil drawings which show the bone structure of your monster. In the case of this image the creature has no eyes, groping with the long tentacles it uses to catch its prey. The more you prepare your illustration, the more believable your concept and illustration will look afterwards.

04 Composition The next important step in the process is to find a good and dynamic composition for the illustration. Once again, create different thumbnails, which, just like the scribbles, shouldn't be too specific. These thumbnails will show you how the final illustration is going to look.

05 Pencil template Draw each character separately on the paper to make it easier to select and place them on different layers when it comes to working digitally. Scan and then bring them into Photoshop. The sketches are like guidelines and will make it easier to colour the picture later on.

See the light

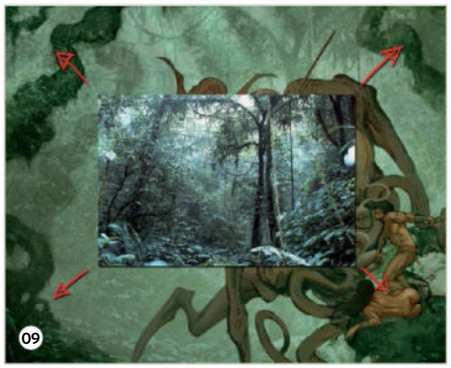
On a separate layer, draw small directional arrows in the corners to help you see where the light is coming from and where the shadows lie. That way you never lose the orientation of the lighting.

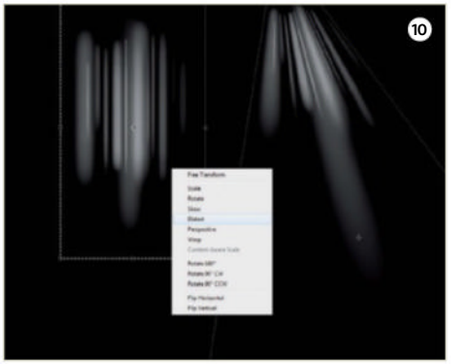
06 Combine images In Photoshop, use the Lasso tool (L) around the parts you want to combine for the complete picture. After that, select every layer, Ctrl/right-click and choose Convert to Smart Object from the list of options. This puts everything into one main layer.

07 Greyscale Once you're satisfied with the composition, start painting in the values in greyscale. This lets you map out the lighting of the scene and gives the flat sketches a sense of depth. Put your sketch on a Multiply layer so you can just see it and shade on another layer underneath.

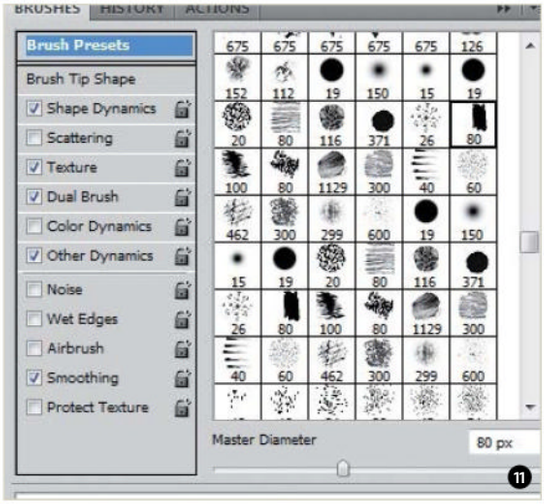
08 Basic colours Now it's time for one of the most important steps – the colouring. Here it is vital to set the right basic colours because the picture is built up from this palette later. Create a new layer in Color mode and start painting in some hues.

09 Background For the background, put a stock photo of a jungle over the whole painting and change its layer mode to Soft Light. Adapt the opacity of this layer a little so it's not going to contrast with the rest of the picture too much. This will give the piece a nice texture. Later we will paint over the top, so this photo is only a basic ground.

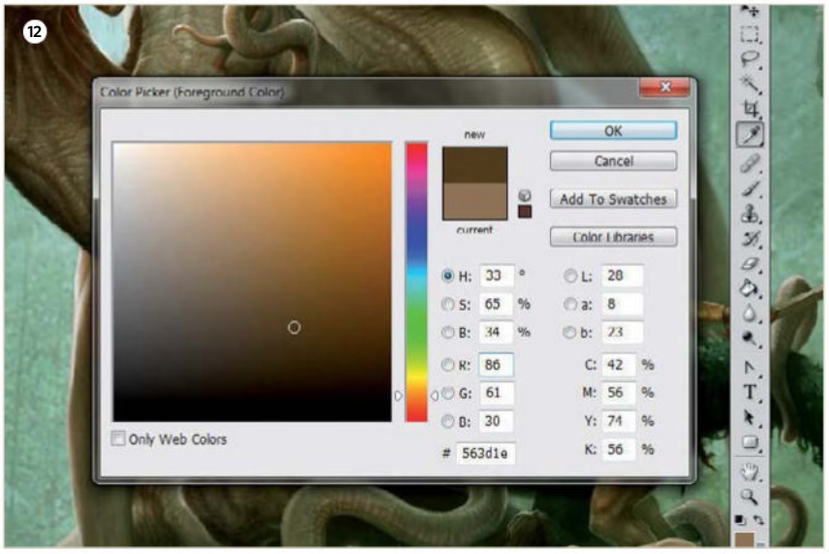




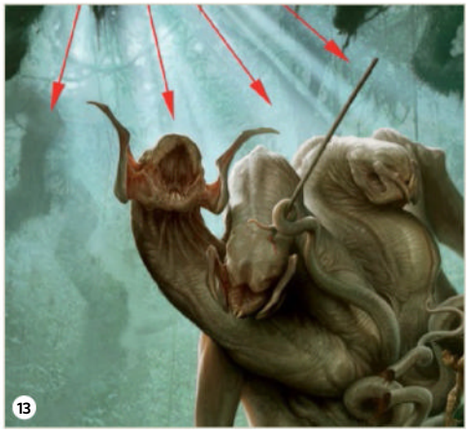
10 Light rays To create the effect of the rays of light piercing the forest canopy, create another layer and draw several straight lines with a soft brush while holding the Shift key. Use different lengths and heights for variety. Now select them using a Marquee tool (M) and change the perspective via Distort. Alter the opacity for realism.



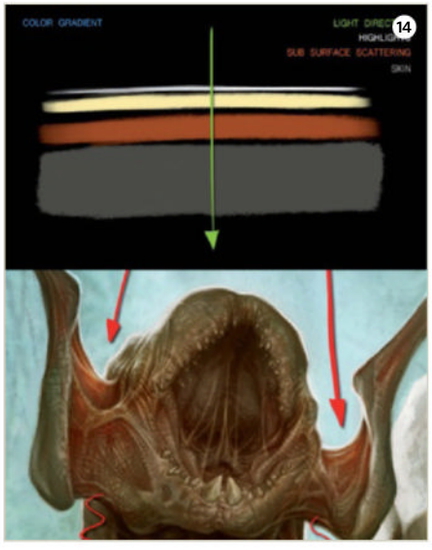
11 The right brushes The style of oil painting is really effective for monster illustrations, and you want to get as close to this as possible digitally. In order to get this effect you have to carefully select the brushes. I use some of Mike Nash's brushes; he offers a lot of fantastic tips on his website that you can download for free (**mike-nash.com**).



12 Amplify the picture Create a new layer in Normal mode and draw on top of the other layers to build up the scene. Don't paint too many details. This step is more about the ambiance, lighting and shade. Don't zoom into the picture, either, instead, keep a full view of it. Use the Eyedropper tool (I) to sample colours you've used, lightening them a bit if necessary.



13 Rim light Paint the rim light on a separate layer. The light source is very strong in this picture, so paint hard white lines. Creating a rim light like this will make the creature stand out much more.



14 Try some subsurface scattering Subsurface scattering describes how light enters a translucent material and exits it at a different point, creating a dappled or shimmering effect. Keep this in mind throughout your brushwork as it gives the skin a realistic look and makes it appear more vivid.

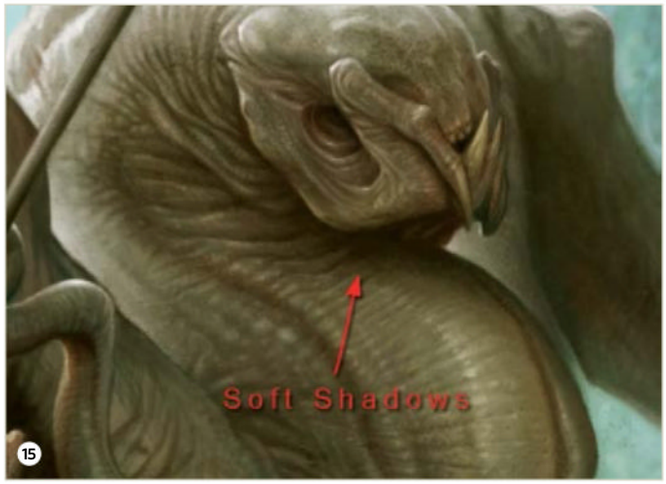
Whole lot of layers

Always use a lot of different layers because that way if you make a mistake you can very easily correct it without erasing other important parts of the painting. Of course, you need to balance this against your computer's resources, otherwise it'll slow down.

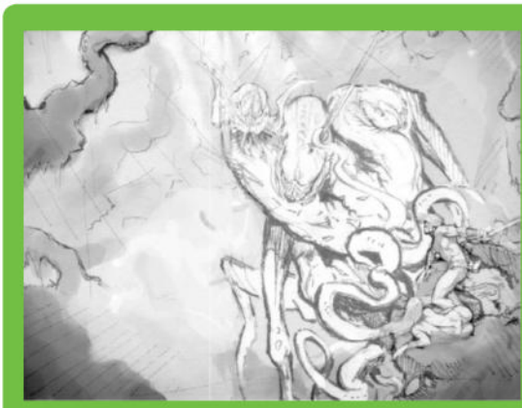
Shading and detail

Complete your scene with accuracy

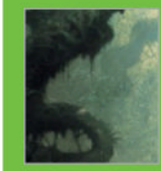
15 Shadows Respect the light and shadow sources, otherwise the picture will look like a bad collage. In this case there is one big light source. Most of the body parts are covered in shadows. Make sure the shadows are not too hard or strong. In this case the object looks more realistic with softer shadows.



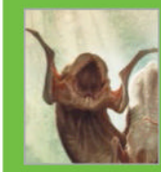
16 Details Details give the picture a realistic look, but it's important that the details always fit into the picture – too many can work against you and actually destroy the realism. The painting must act as a whole! If you draw a lot, you develop a feeling for this balance with time.



Key techniques

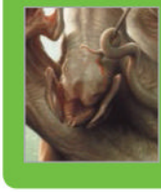


01 Make sure you understand the environment your creature lives in. The deep jungle valleys suggest that this eyeless creature has been sleeping in semi-underground shade and has been disturbed by the humans.



02 You can think up a weird creature, but there will be something weirder in nature. Look at creatures that behave in the way you want your monster to behave. You can base your ideas on references of a creature of any scale.

03 Why has your creature gone into combat against humans? There needs to be a back story that the reader can clearly see. This couple were evidently enjoying some quiet time in the jungle when they awoke this beast.

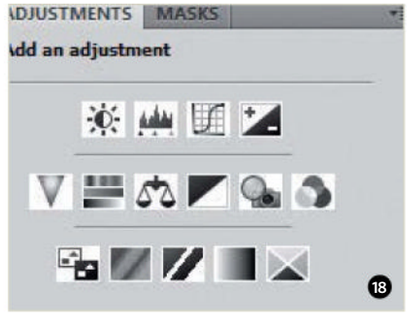


04 The man was armed with a sword and a spear, which he has thrown at the creature. The spear has injured one of its heads, driving it into a fury of pain, which makes it attack further. Give the viewer a storyline to sell the idea.

Photo-realistic fantasy

Study a lot of reference photos of environments or animals. These photos help you to paint more realistically, because you see how the light and shadows behave.

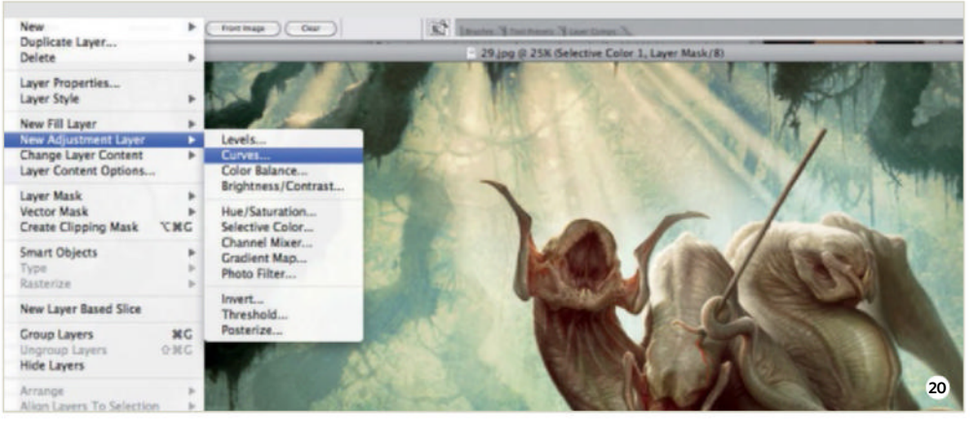
17 Depth To create a greater sense of depth you should paint fewer details on objects that are far away in the background. Instead, aim for the effect of fog for these objects, so you only see their silhouettes or very vague elements of their form. Fill these parts with just the basic colour of the background.



18 Correct the colours The picture is almost finished, but at this stage it often happens that the drawing looks too dark or not punchy enough. These problems are easily fixed with adjustment layers. With the Selective Color adjustment, for example, we can change several colours and with the Channel Mixer we can change the lighting.

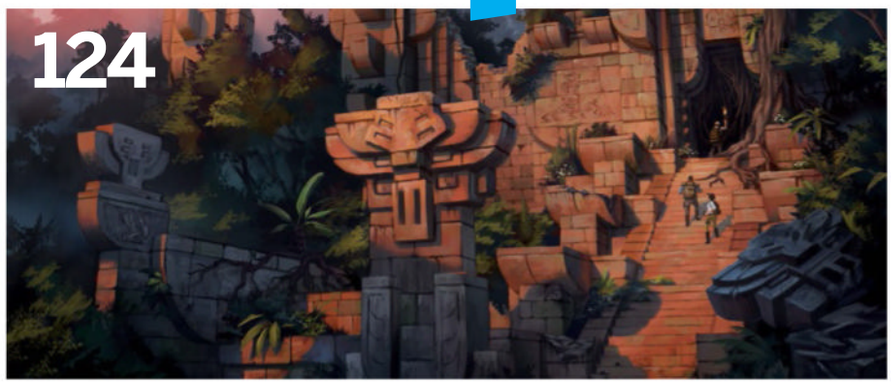
19 Brighten highlights You can lighten only the highlights or certain colours without changing the rest of the picture. Create a new Selective Color adjustment layer, click the White box on the layer, take the Paint Bucket tool and fill the picture with black. Now take the brush and paint with white on the parts where you want the colour adjustment to show.

20 Final touches Balance your colours and contrast using adjustment layers. You can change the contrast with Levels or Curves – experiment with the settings and find out which suit your image best. Remember that you can adjust areas of the painting without tweaking the entire thing using masks.



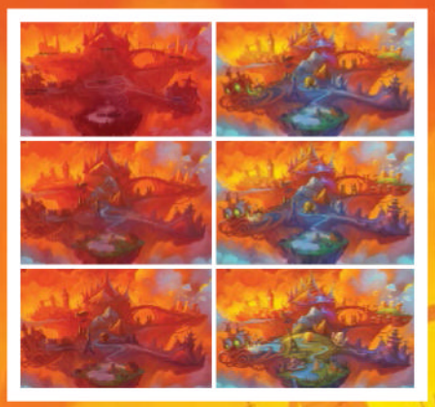
Landscape

Take your characters to whole new worlds and even new universes



> “Photoshop is the best software for digital photomanipulation since it handles brushes, layers and effects smoothly”

106



Elevated Map
Jeremy Vickery designed this magical land for a kids' TV show in 2008. His process is to start his images "with broad colours and a simple composition" that is "striking without any detail"

Make a fantasy landscape

Think Mordor, think Hogwarts, think Tatooine. Fantasy landscapes have to be more than just magical, as Poz Watson explores

Fantasy landscapes – or the environments in which fantasy takes place – are crucial to the genre's success. They set the mood and they inform the audience about the world, as well as literally giving films and games a place to play out their narrative. The depth in terms of detail required largely depends on the project and can vary significantly. Films need digital mattes (extremely detailed and photo-real landscapes to stand behind the action) while games need interactive environments (so the character can cross that bridge or open that door).

Digital artist Jonas De Ro (**jonasdero.be**) creates fantasy landscapes both as illustrations, and also as concept art for websites and the games industry. He notes that his work is "usually for illustrating or designing an environment. Basically that means his work entails developing a non-existing place not only in terms of design but also with regard to mood, lighting and of course overall composition."

Jeremy Vickery (**jermilex.com**) works full-time for Pixar as a lighting artist, but he also does a bit of "illustrating and world creation on the side. For a

Make a fantasy landscape

few years I tried my hand at a freelance life and found I was creating a lot of illustrations and concept designs for various clients. Some of the clients were making games and I was either creating the full environments for the actual games, or just sketching various ideas to be built later. Sometimes the clients would have me do both the concept and the final art (sometimes 2D, sometimes 3D)."

Outside of the fantasy arena, landscapes can be found outside every window. They have to depict reality exactly, which can be difficult, but they don't have to create anything new in their design. There is a massive demand for environments in film, TV and games these days, but so too is there a quest for plausibility and originality.

That's a tricky combination to accomplish. Lane Brown (**lanebrownart.com**) says that one of the clichés that he sees a lot is the "tendency for artists to focus so much on making a fantasy scene 'epic' and so grand in every aspect, that the result lacks any sense of intimacy. We should focus on enriching the mundane, rather than attempting to remove it completely. Epicness is relative."

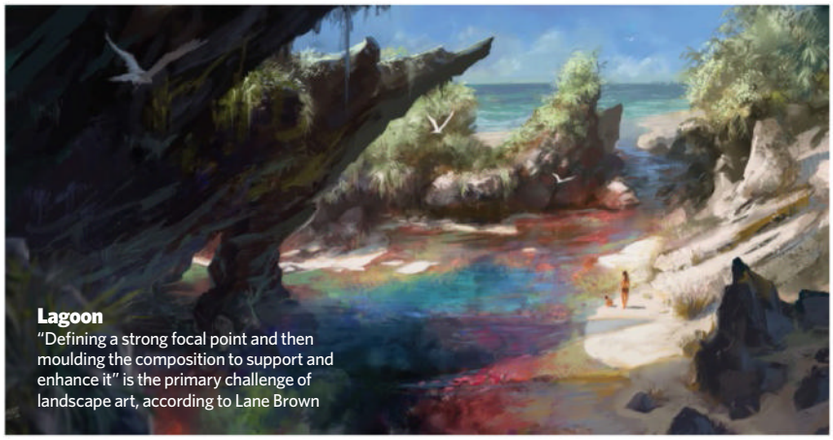
Town and country

The biggest divide for fantasy environments

As these pages show, there is an enormous amount of variety when it comes to fantasy environments, but the biggest divide is perhaps between town and country imagery. Artists tend to prefer working in one or the other. Jonas De Ro has created a lot of urban work, where he says the biggest challenge is perspective. "Though I know how to apply the basic rules, there are a lot of situations where things get more complex... Buildings that are off-perspective hit the eye right away. However, using a basic vanishing point technique doesn't do it for me. A lot of cities are built organically and not on a grid-like system, meaning that different buildings are built on different planes, each having their own angle and thus many different vanishing points." De Ro says that cityscapes do have one thing going for them, however: neon. "I really love doing night neon scenes," he says. "Mainly because it allows you to be quite free and abstract with building shapes. Additionally the high contrast of all the lights and signs always creates a nice effect against the dark background."

The natural world offers an enormous amount of variety; forests, lakes, deserts, tundra, the coast and more. But this variety can be forgiving. De Ro says "Whenever I do a landscape piece that involves a natural environment, I feel such a relief when working with organic shapes where these perspective rules don't apply so strictly."

Iroshi
Inspired by Tokyo and created in the wake of the tsunami and earthquake that hit Japan, Jonas De Ro created this futuristic cityscape



Lagoon
"Defining a strong focal point and then moulding the composition to support and enhance it" is the primary challenge of landscape art, according to Lane Brown

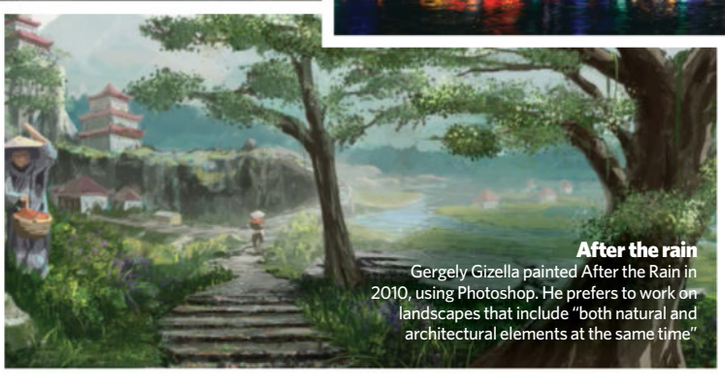
Temple Ruins
This is part of a 2012 series, where Jonas De Ro used Photoshop to turn cities and places into post-apocalyptic environments. Here, even the sunlight doesn't seem comforting

Each landscape, and indeed each use (digital matte, concept art, interactive environment, illustration) for a landscape has its own challenges, but essentially you are asking the audience to buy into a world that you have created, so your art has to be functional, plausible, evocative and immersive. Detail is crucial to this process. If your sketch is concept art, then it also needs to convey to the person who's going to take the design on how the terrain feels, for instance. If you are working on a design for a game, then composing it so there is space for the characters to move around is absolutely critical.

Jeremy Vickery usually spends an hour or so researching an idea before he gets started, looking at other landscapes, other fantasy images and more. "Once my brain is full I start to sketch and let it all out," he says. "My brain feels like a big sponge and the more I can fill it with excellent art the better. Walking through the Musée D'Orsay in Paris was

Make a fantasy landscape

Neo-Shinjuku
This 2012 cityscape from Jonas De Ro uses the help of Photoshop to imagine what a Tokyo-like city might look like in the future, when the existing structures have been further built upon



After the rain
Gergely Gizella painted After the Rain in 2010, using Photoshop. He prefers to work on landscapes that include "both natural and architectural elements at the same time"

like a mind overload of goodness... so much amazing colour and composition."

Of course, landscape art – like portrait art – has been around a long time. Typified by a wide angle and epic scope, it's always depicted both towns and countries, and realism and detail has usually been important. There are two major traditions in landscape painting: the Western one, stemming from Roman and Greek frescoes; and the Chinese shan shui (mountain water) ink paintings. The latter never featured human beings, and grew in status, whereas in the West the landscape fell out of favour. It is only now, with the advent of photo-real art and its use in film and gaming that the landscape has become big business, rather than art for art's sake.

First of all then, a landscape or environment has to be functional. It has to tell the viewer something about the world. So is this a bustling city or a desolate cliff top, or something in between? What is the terrain like? What is the weather like? What kind of people or creatures live here? If you're trying to bring to life a world that is currently only in the client's head, then you need to ask all these questions and more. In those cases, Gergely Gizella (**logartis.info**) says "the biggest challenge is obviously to visualise a world by description only, as [it] was imagined by someone else. Technically speaking, setting up the basic scene and finding the best lighting setup is the most challenging for me; the detailing is usually the fun part of the process."

It is also absolutely crucial that the image works for the intended audience. That might be the cinema-going public, or it might refer to the modeller or animator who is next on the project. Or – as Gizella recently discovered – it might be children. "Currently I am working on backgrounds for a game aimed at small children and in this case there is no place for anything abstract, like visible brush strokes and such, because they can't understand it. Everything has to be easily interpretable, sometimes at the expense of atmosphere." It needs to be good art too though, because, as Lane Brown notes: "You can't really convey any information until you have the viewer's attention."

Second, the landscape has to be plausible. That doesn't mean realistic, just believable within the bounds of the world you're working with. In Harry Potter it's fine for a dragon to carry a teenager in jeans. In another world it might not be. Jonas De Ro – who works on commissioned concept art as well as personal illustrations of landscapes – explains that he has recently been working on a piece where he "placed elements of countryside USA next to those of modern Russian cities. Not something you'd expect to see usually, but if you do it well it can be pulled off and the effect in this case could be described as a sort of contemporary fantasy. It's a bit like the feeling you get in some cities that were

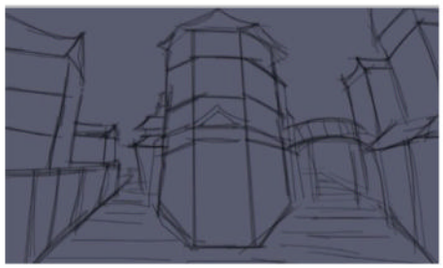
Aqueos
Lane Brown created Aqueos in Photoshop in 2010. Lane doesn't like to bog himself down with research, saying: "I save my research and reference-finding for when I hit the boundaries of my imagination"

Pandemonium
Ramsés Meléndez designed this image of Pandemonium city in 2012 in Photoshop, concentrating on the red and yellows to create what he calls "an impressive hell castle"

Underground city
Marta Nael painted Underground City for Luke Keith in 2010, using Photoshop

Bring your world to life

An environment for an iPad game set in the Far East in the 17th Century



01 Sketch it out First Gizella creates "a very rough line sketch in order to have a basic idea of the space and perspective." The feel of the piece – claustrophobic, intense – is immediately clear from the angle and lack of sky.

02 Atmospheric pressure Experiment with the right colours to achieve the right atmosphere. Gizella fills them in "with a simple brush to see how they work together, focusing only on the large surfaces like the sky and walls."

03 Light and shine "Once I find the right colours, I start thinking more about the lighting and smaller elements. In this picture the main light source is the sun and its reflections will be important, so I block them in too."

colonised, where you have traditional buildings next to colonial ones. This also creates an interesting backdrop for the world you're creating and not only makes the viewer but also the creator think more about what could have happened in this world and what its history could be." This plausibility seeks to ground what might be considered fantastical (a villain's lair, a towering castle, gleaming spaceships) and fully engage the audience with the scene.

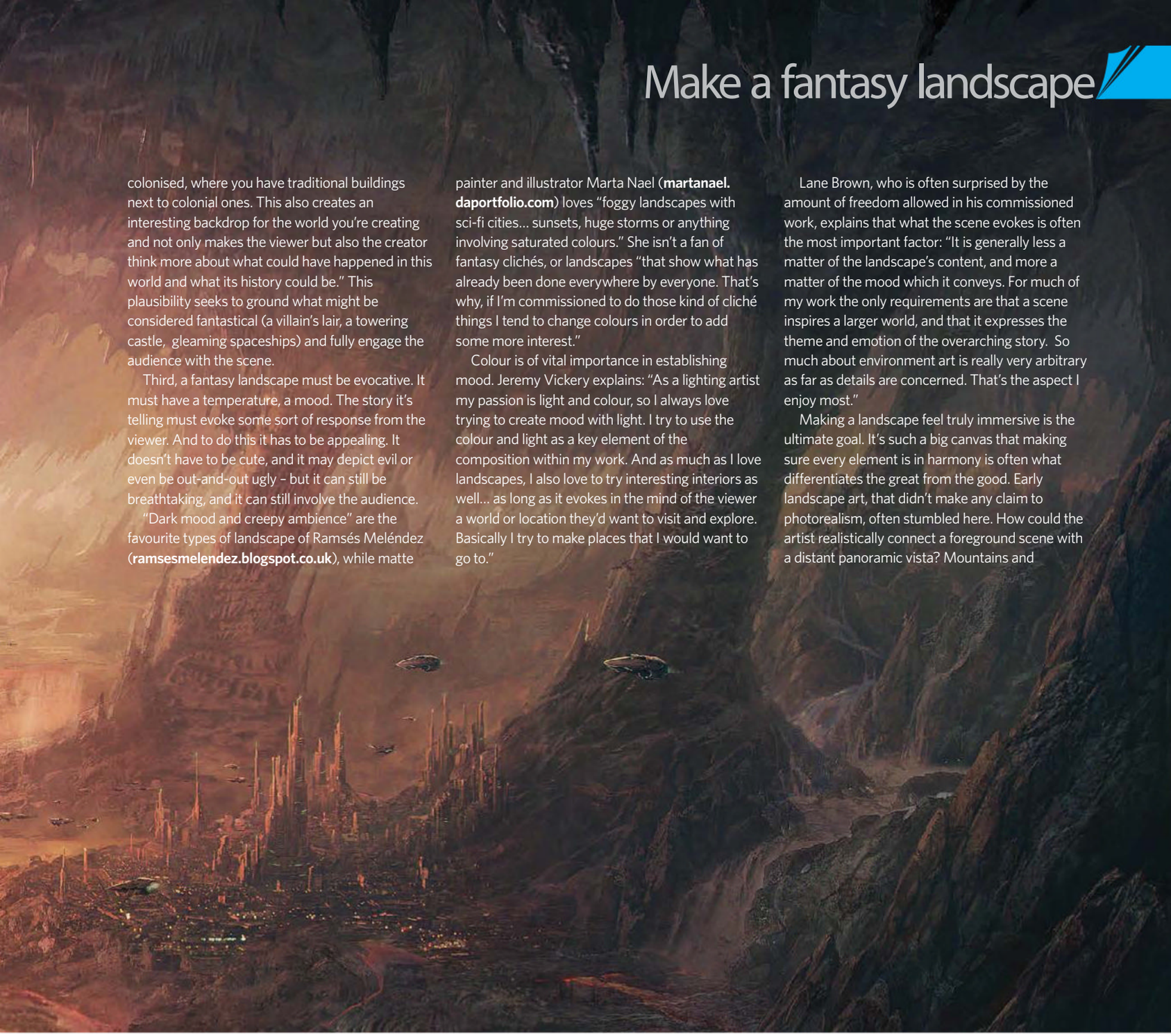
Third, a fantasy landscape must be evocative. It must have a temperature, a mood. The story it's telling must evoke some sort of response from the viewer. And to do this it has to be appealing. It doesn't have to be cute, and it may depict evil or even be out-and-out ugly – but it can still be breathtaking, and it can still involve the audience.

"Dark mood and creepy ambience" are the favourite types of landscape of Ramsés Meléndez (**ramsesmelendez.blogspot.co.uk**), while matte painter and illustrator Marta Nael (**martanael.daportfolio.com**) loves "foggy landscapes with sci-fi cities... sunsets, huge storms or anything involving saturated colours." She isn't a fan of fantasy clichés, or landscapes "that show what has already been done everywhere by everyone. That's why, if I'm commissioned to do those kind of cliché things I tend to change colours in order to add some more interest."

Colour is of vital importance in establishing mood. Jeremy Vickery explains: "As a lighting artist my passion is light and colour, so I always love trying to create mood with light. I try to use the colour and light as a key element of the composition within my work. And as much as I love landscapes, I also love to try interesting interiors as well... as long as it evokes in the mind of the viewer a world or location they'd want to visit and explore. Basically I try to make places that I would want to go to."

Lane Brown, who is often surprised by the amount of freedom allowed in his commissioned work, explains that what the scene evokes is often the most important factor: "It is generally less a matter of the landscape's content, and more a matter of the mood which it conveys. For much of my work the only requirements are that a scene inspires a larger world, and that it expresses the theme and emotion of the overarching story. So much about environment art is really very arbitrary as far as details are concerned. That's the aspect I enjoy most."

Making a landscape feel truly immersive is the ultimate goal. It's such a big canvas that making sure every element is in harmony is often what differentiates the great from the good. Early landscape art, that didn't make any claim to photorealism, often stumbled here. How could the artist realistically connect a foreground scene with a distant panoramic vista? Mountains and



Gergely created Downtown in 2012, using Photoshop. His final step was to adjust the colour balance and the Hue/Saturation to achieve a warmer look

04 From draft to detail With the building blocks in place, the real works comes in. "I started refining the buildings, starting from large surfaces and then worked myself into the smaller ones. I also added some new elements and details."

05 Let there be (more) light Gizella found the composition unbalanced, so added street lamps to the left to compensate for the light coming from the sun. He added "textures to the flat surfaces, mostly using custom brushes."

The classic fantasy castle
Stonehold is a personal piece by Jonas De Ro, created this year. "The basic setup was to have a horse rider against an elevated castle carved out of a rock," he explains. Emerging from the rock softens the castle, and it unifies the piece.

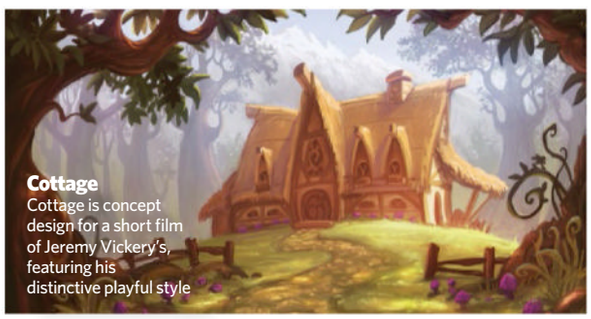
Set the tone

If you go down to the woods today, you'd better go in disguise. But which one to choose?

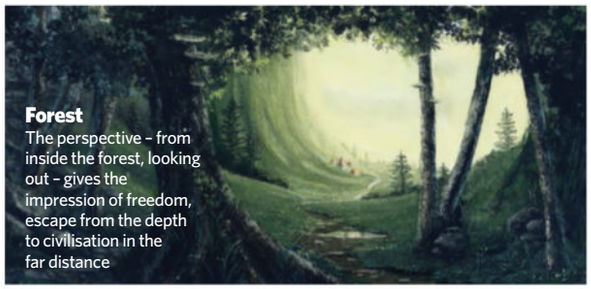
The enchanted wood is one of fantasy's staple locations, but its tone and feel can vary enormously. Woodland can be cute and appealing – a place of bunnies and picnics –or it can be filled with beasts and have a prison-like vibe, where light can't get in and fair maidens can't get out. So when you're drawing those trees and rocks and sky, think hard about the shapes and colours you choose.

"I love playful organic environments, if it's not obvious from my work" says Jeremy Vickery. "I definitely don't prefer realism, but rather stylised cinematic worlds" as shown in his concept work here. Gergely Gizella likes to bring out the attributes of the wood, but comparing them to the world beyond, saying that he prefers to create "landscapes that include both natural and architectural elements at the same time."

Forests feature heavily in Lane Brown's work, usually "with lots of exaggerated rock formations and a stream of water to tie it all together. I am a fan of organic landscapes, as opposed to scenes with heavy amounts of architecture and geometric material. Organic subject matter allows me to push and pull elements to best suit the overall composition. Trees and rocks can be bent to serve just about any purpose."



Cottage
Cottage is concept design for a short film of Jeremy Vickery's, featuring his distinctive playful style



Forest
The perspective – from inside the forest, looking out – gives the impression of freedom, escape from the depth to civilisation in the far distance

The mist
As there was in ancient Chinese landscapes, there is lots of mist here, passing through the rock formations. "Mist always helps to add depth to the scene because of the colour perspective it creates," says De Ro. "Things in the distance become vague and less defined giving a more mystical feel."

Human behaviour
In an earlier version of the image, the rider was bigger, but De Ro tweaked it, making him look suitably dwarfed by his environment. The other finishing touch is the birds. Their movement just off the centre gives this still scene some extra life.

Ray of light
Sky is always crucial in landscapes, and seeing a lot of it helps to give a sense of the epic, as here. To help create that "sense of wonder" De Ro has also added strong light rays. But it's not a bright, clear blue sky; everything here is more complicated than that, hence the mist.

White light
The limited range of colours is one of the things that makes this piece such a success. Blacky greys and browns, dark green, bright blue and lots and lots of white all make it look as if there is a lot of light in the scene, but also keep it natural and muted.

Down to the water
"To make the environment impressive, one needs to put a lot of things together," says De Ro. Here, everything is framed around the water. "This is typical for fantasy, where we put all the elements that we like into a single frame to create an epic setting. Something that is more rare in the real world."

waterfalls were often lobbed in to disguise the change in perspective, or in the case of the Chinese paintings, large amounts of swirling mist used.

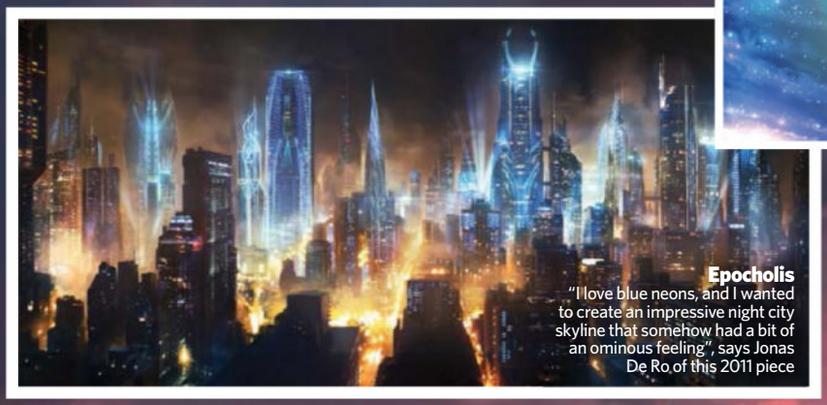
"I love to create new kind of landscapes," says Ramsés Meléndez, "and I feel happy with this, because I think it would be great to live in these worlds." And that really is the key to a successful landscape. The artist needs to believe that this is a world, not a single shot, and if they do, then hopefully they can convince the viewer of the same thing. If the scene in question is designed for a game then those details need to have a purpose. The artist needs to consider the player's experience of going through the world, using paths and leading them through or confusing them as you desire.

The key to convincing is in the details. "Those details just need to texture the image with a high-resolution look," explains De Ro. "The main idea should be there pretty much from the beginning, and a thumbnail comparison with the final work should not be too different. However I do find myself playing with these details to add interesting information to the main scene. People like to look at little details that might help them imagine or figure out the story behind the picture, or to look at a picture several times and discover things they had not noticed before."

But Vickery adds, "a lot can be conveyed with simple shapes and strong lighting, which makes the world immersive and evocative. I try not to get too caught up in details that would make me lose sight of the big picture. Form and light must work together until you can't tell which is which and the world just 'is' and invites people to jump in."

It might sound like a lot, to ask a landscape to be functional, plausible, evocative and immersive, but that's the standard of work that's out there. Because of the detail that games and digital mattes have, even those just creating illustration have to raise their game. And as well as making people want to step into your world, you might even try making them think about this one. As Marta Nael adds: "I always try to create landscapes that allow people to travel to fantasy worlds or else make people think about what we are doing with our world. Wars, pollution and crisis are things that can also be recreated in a sci-fi painting and help people think about it. They actually are not frozen landscapes, they're worlds with a future, a past and a present from which we can only see a single snapshot."

Reach for the stars
Originally created for a book cover, Gary Tonge also painted this piece in Photoshop using his Wacom tablet



Epocholis
"I love blue neons, and I wanted to create an impressive night city skyline that somehow had a bit of an ominous feeling", says Jonas De Ro of this 2011 piece

Key skills for sci-fi scenes

Alien worlds are so much more than flying saucers and little green men. Poz Watson explores how setting a scene and story can improve your sci-fi art

One of the wonderful things about science fiction is how much possibility it offers. It can feature humans, aliens or robots, it can be technological, utopian or apocalyptic and it can take place right here on earth or half a universe away. All it needs is something slightly different from the here and now of real life, sometimes known as the novum. This is the little piece of innovation (the science) that defines a world and kicks off a story (the fiction), and the reason why there is much more to sci-fi than meets the eye.

Concept artist Jonas De Ro (**jonasdero.be**) says that one of the most interesting things about science fiction is that "even though we are many decades away from when the genre first originated, our concepts of possible future technologies have not changed that much. The reason is because reality and science fiction go hand in hand. Think about how the movie Minority Report influenced the current technology of touch screen smartphones and tablets." But while we still don't have our jetpacks, some things have changed. De Ro explains: "Back in the day the entire commercial music industry could be crammed into a few genres. Today, there are sub-genres of sub-genres, to the point where nobody even knows how to label things anymore. Science fiction ideas are taking the same road... it's the only way of being original."

So, there's hard sci-fi (accurately scientific), soft sci-fi (based on a change in the social sciences, like psychology or economics), time travel, alternate histories (what would have happened if Kennedy hadn't been assassinated?), cyberpunk (what happens when advanced science goes bad) and more. Genre mutation is particularly rapid in the punks arena: steampunk, for example, deals with a world of steam-powered high technology.

Dawid Michalczyk (**art.eonworks.com**) combines elements of abstract and surreal art in his sci-fi work. One of his strongest influences is cyberpunk, and he says: "Cyberpunk is appealing to me because I have been into computers since the mid-Eighties. Back then, computers were these amazing tools that few people had, and even fewer knew how to take full advantage of them. You could type in pages of enigmatic codes that would magically result in a program. So the whole idea about computer hackers in a futuristic hi-tech world doing things few people can is cool." And that's the appeal of sci-fi in a nutshell. It's got science and ideas and the universe, but it's also got guns and spaceships and big robots. Basically, it's cool. Popularity brings its own problems, though, and the fact that sci-fi is such a hit at the cinema and on TV means that everyone, not just the hardcore faithful, have seen its wealth of ideas.

Raevona
Raevona shows some enormous docking towers in a future sunset, made by Gary Tonge in Photoshop. He says he wants his work to be: "Something the viewer can buy into and believe no matter how complex or otherworldly the piece might be"

"Today a lot of people feel like they've seen just about everything", says De Ro. "When creating sci-fi art, avoiding clichés is a bigger challenge than ever before... The problem is not so much one of specific design, but rather one of concept. Though we might easily come up with a unique look for a new spaceship, robot or armoured suit, the actual ideas behind them have been done many times... Unfortunately for modern artists, once something becomes a cliché, there is no turning back from it."

And if you can't ignore a cliché, what can you do? Embracing them is one option, subverting them another, and like any area of art you have to find the space to be true to your own passions. Gary Tonge (**visionafar.com**) says: "I certainly steer clear from the... conceit of a war in space... I feel the majority of the universe enjoys a more peaceful and productive existence than many tend to paint."

The final frontier is a big topic. It's naturally compelling and awe-inspiring, and there's plenty of room for creative license. As André Zacharov (**cyriixx.deviantart.com**) shows, space scenes "include pretty much anything in space created naturally, from planets and moons all the way up to entire galaxies. I... appreciate the massive scale these pictures [can create] while often retaining a lot of simplicity."

Simplicity is impressive when done well, but Zacharov also acknowledges that a lot of skill is required to make space images look real. "I often see people piecing together a scene using parts done separately, but forgetting to make them blend well", he says. "This can happen when importing 3D renders or textures. A good way I use to avoid this look is to add the lighting colours last. The shadows are important to get down early, but you can not use a [highlight] until you are almost done."

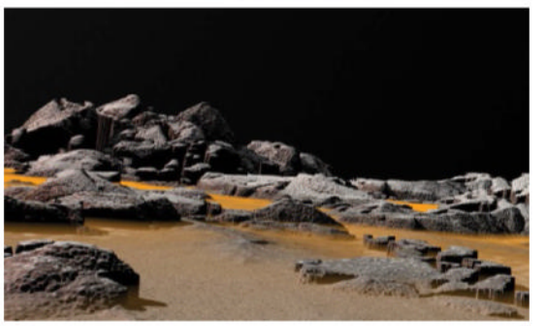
Black Lung
This is the cover of The Black Lung Captain that Raphaël Lacoste painted in Photoshop. By never giving too much information, he likes to keep some mystery in the picture

Create some space

Dawid Michalczyk on designing space scenes

01 Basic lighting "I do most of my space artwork in Bryce", says Michalczyk. He starts "by adjusting the sky and sun settings to approximately match the type of lighting I'm after. Next, I create a single terrain mesh and manipulate it until I get the... look I'm after."

02 Textures and mesh "I will also try different textures until I get one that works well", he says, describing his technique for surfaces. "Then I create a copy of the first terrain mesh, do some adjustments to create a variation of it and position it according to the composition that I have imagined."



03 Adjustments Michalczyk then repeats these steps until he is satisfied with the way the terrain looks, noting, "during this process I often adjust the lighting and sky many times, I may change the terrain textures and may change the composition somewhat – sometimes very radically."

04 Post in Photoshop Once satisfied with the lighting and terrain, he continues in Photoshop: "I do stars, sometimes planets and post-processing in Photoshop. I don't use any special plug-ins, just create my own stuff as that way my work is more original."

05 Final tweaks Finally he makes colour touch-ups and other adjustments. "To prevent or eliminate banding", he notes, "I usually add noise either to the whole image or parts of it like the haze, fog or sky. I work in sRGB mode as that is the most compatible colour space available today."

Orbit Redux
Orbit Redux features "a civilisation that has built structures right out to the perimeter of their atmosphere to greet arriving vessels", says Gary Tonge. He uses Photoshop and advises that: "Art comes from within you and that in turn comes from your experiences and your individual personality – let that shine through in your works"

> "Avoiding clichés is a bigger challenge than ever... The problem is not so much one of specific design, but rather one of concepts"

And if you don't want to tackle whole planets but do fancy a big canvas, landscape paintings are also popular, showing the environment as well as the possible creatures and culture. The detail in the work of someone like Gary Tonge is incredible, enabling him to tell a story and immerse the viewer in an experience. He says he achieves this by "being completely obsessed with trying to paint the perfect image." Recently, though, he has tried to force himself to work faster, and says: "I now often tend to be happier with the images that have not taken as long to do – images in which I have implied detail."

Matte painter and art director Raphaël Lacoste (**raphael-lacoste.com**), who has worked on games like *Prince of Persia* and *Assassin's Creed*, also creates breathtaking landscapes. He says: "I love the feeling of immersion in a stunning location... I am still pretty open on the style of sci-fi, as [long] as it is well executed with taste!"

One of the great pleasures (and challenges) of science-fiction art is how it encompasses cityscapes and the natural world, as well as creatures and technology. Technological changes are a dream to come up with when you don't actually have to invent them – in your world time travel, mind control and hyperdrive could all be possible. Anything that can be done in fantasy, can be done in science fiction, the explanation behind it is simply technological (or pharmaceutical) rather than magical or paranormal. But while it's fun to invent, Kai Lim (**imaginaryfs.com**) warns against "mindless kit bashing. [Not knowing] how things work... An over-reliance on thinking that the audience is too stupid to figure out if a design seems plausible or not (the science in science fiction), [means you end] up insulting them instead." It is essential to know the reason things work and how they do. "Putting random rivets and pipes on machinery does not make for gritty design. Putting it where it should sensibly be, makes for gritty design", says Lim.

Of course, once you've designed spaceships and robots, it's natural to want to see them put into action, and combat is something that is often required to be depicted on book covers, as well as in films. Lim says: "Answering the brief is the biggest challenge. A combat scene may come with a narrative that needs [a focus]... The image has to be constructed around it, otherwise the point is lost." Clarity is key, as is injecting a sense of energy into the image. Lim says this is not too difficult, "once the inspiring chemistry of explosions and crazy lighting... comes into play. I think one of the simplest ways to inject energy is to depict objects in different states of motion. I enjoy suggesting... a still frame, captured in time, of an extremely chaotic scenario, giving each area breathing room."

The success of a lot of science fiction comes down to plausibility, although artists disagree as to

what level of it is required. For Zacharov, it depends entirely on what element of space he is depicting: "When drawing a close-up of a star at one point, I actually showed drafts of it to a family member who knows a lot about the physics of stars. This way I made sure that the colours and, to a smaller extent, patterns, roughly matched a real star of a similar type to what I wanted... Other times, often with things like nebulae, I will just go for the looks and not really mind if it's is staying true to the real thing or not."

When you're working to a brief the level of realism, or plausibility, is often determined by the client and the ideas and concepts that they discuss with you. "I am not trying to ground everything into a plausible world", says Lacoste. "It depends, of course, on the project and universe, the setting. Regarding Assassin's Creed, we have... a scenario to follow so nothing is left to random inspiration, it has to be plausible!... If this scene is for a book cover, I will know at least about the script, and will also have a brief from the editorial art director", explains Lacoste.

But for other artists, what the final image looks and feels like as a whole is much more important than worrying about where each individual rivet might go. "It's more about making things look as if they would make sense so that the viewer doesn't feel confused or unimmersed", says De Ro. "In many cases, imagining something plausible can help the artist in the design process. Particularly when doing props or other items, thinking about the functionality of what you're creating helps [with] figuring out how something should look, or be built. In the end, however, the priority is usually that something needs to look cool as opposed to being entirely accurate."

A big part of the joy of sci-fi is the leap into the unknown, so perhaps what seems plausible is beside the point. Dawid Michalczyk argues: "In reality, a spaceship from an advanced civilization could be the size and shape of an egg.... [and] there are endless possibilities of how to make an egg look more interesting. So I don't spend much time considering the plausibility of what I create. As long as it seems possible to me, makes sense visually and looks cool, that is all I need."

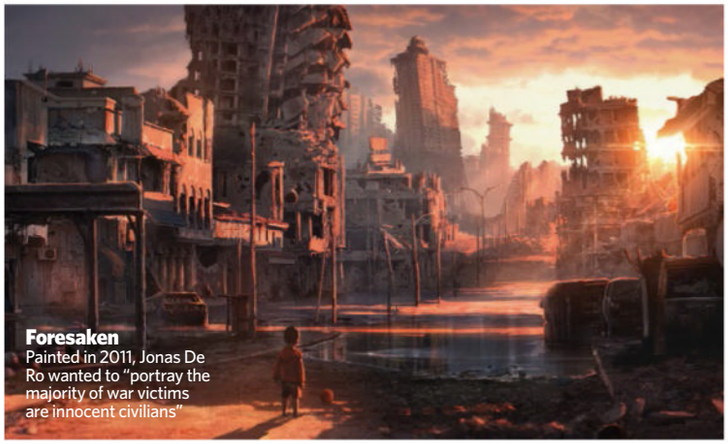
Kai Lim says he is a fan of Eighties hard sci-fi because it "blends thoughtful functionality with gritty, almost camp, over-the-top action... I think by focusing on what could actually work (at least theoretically), married with barely-believable but incredibly fun scenarios makes for engaging entertainment, and helps with suspension of disbelief. I feel it's win-win that way." But it's only win-win if artists can keep refreshing the genre. As De Ro puts it: "Artists and designers who did the first Star Wars, Blade Runner and other works that set many standards for years to come did not have the huge [back catalogue] we have today." Now, he says, all artists can do is "continue to work and think hard to come up with new original ideas to wow clients and audiences."

Put like that, it seems a daunting task, but how can young artists not be inspired by the mysteries of the universe? How can they fail to get excited about developments in space travel, in computer technology, in medicine? Tonge says: "The most compelling part of the sci-fi genre for me is the opportunity of illustrating something that evokes a feeling of hope and...happiness. I really enjoy creating images that tend to give our imagination some food for thought about what might be out there... or indeed what we might be able to achieve as humanity in the future."

Out of this world

Urban or alien, desert or tundra – the sci-fi landscape has infinite possibilities

Jonas De Ro says that the biggest challenge when creating a sci-fi environment is "originality." His sub-genre of choice is post-apocalyptic sci-fi, and while it's hard to come up with an original take, it certainly has its advantages. Not only is it "intriguing and fun", but, he says, "they are also actually quite easy to do, since you can get away with mistakes a lot more... I usually add signs of new life. I like thinking of a destroyed world as the beginning of something new."



Foresaken
Painted in 2011, Jonas De Ro wanted to "portray the majority of war victims are innocent civilians"

Desert Moons
This new world was created by Dawid Michalczyk in 2011 using Photoshop and Bryce

Dawid Michalczyk creates a lot of alien worlds because you can do anything with them, and he thinks keeping things as simple as possible is crucial. "Especially in games and much concept art", he says, "there often seems to be [an] excessive amount of detail that does not make much sense or improve the visual in any way. I'm not against detail; in fact I love it when it makes sense. But, overall, it seems to me that there is a need for more balance."

Putting the science in science fiction

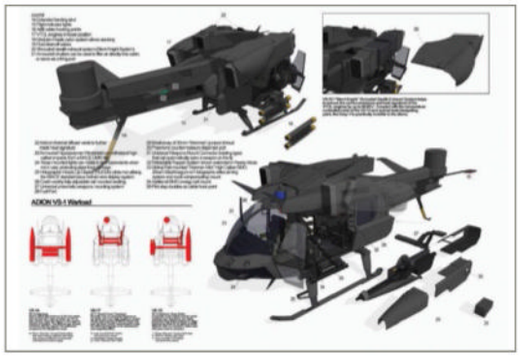
The technology is what makes one sci-fi piece strong and another derivative

Kai Lim, co-founder and senior art director at Imaginary Friends Studios, works hard on the technology he paints, saying that he makes "a point to know more and more each time."

When he's doing concept work for a client it depends on what they want and what time is available, but he does his utmost to "generate something fun and plausible at the same time."

You need a clear idea of what you're painting in sci-fi (or a clear idea from the client) and this is doubly important in concept art, where you are designing something for execution in a game or film, not just drawing something pretty.

So whether you're designing robots, spacecraft or weaponry, you have to have some idea of how it works, how that fits with the practicalities. What can the armour withstand? How fast does the ship go? Can the robot be shut down if it goes rogue? You have to know.



Mace Aircraft Vigilance IFS designed all the kit and characters for MACE (**macecommand.sg**). You can see here to what degree Lim works out how the craft fits together and functions. The concept art for MACE: Vigilance Alpha was created in 2010 using both Google SketchUp and Photoshop.

Phobos Tactica
"My ideal projects have been where I get hired to design stuff that works and looks good", says Lim. "Stuff that I would want to own myself. I have done projects like those and the internal effort is pretty substantial. It's great to feel invested in the stuff you create, the only limit is my client's time and how deep they want to go."

Phobos Tactica 40K was created by Kai Lim in 2012 using Google SketchUp and Photoshop

Monsterapocalypse Now: Swarm was painted by Kai Lim in 2009 using Photoshop

Monsterapocalypse Now: Swarm Kai Lim's image was made for the Monsterapocalypse rulebook. He says: "One of the greatest gifts sci-fi has given me is the need to learn more... in the pursuit of coming up with things you can love."

Alien Mind Dawid Michalczyk's image was created in 3ds Max and Photoshop. He says: "If it's a personal work, I only know what I have imagined about the character or scene, which is usually limited to appearance." His intention here was to depict Clarke's third law, that sufficiently advanced technology is indistinguishable from magic.

Crimson Horizon
André Zacharov

Compose a spacescape

Wayfarer 2011

Photoshop

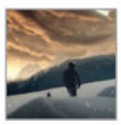
By the end of this tutorial you'll discover the means to create realistic and futuristic looking scenes

In this tutorial we will learn how to create a moody extraterrestrial landscape. All you'll need is Photoshop and a good source of photography. The best way to ensure you get the perfect shot is to take it yourself, therefore it's very helpful to have a DSLR, ensuring high-resolution quality in your resources. To get the necessary inspiration for your project, just take a walk outside. Another option is to use an image search; by searching for 'mountains', for example, you'll get a variety of shapes and ideas that will stimulate your imagination. If you don't have a DSLR, you'll need to use stock sites such as **iStockphoto.com**. In preparation for this tutorial you should collect or take photos of things that might be useful for detail. You can find all the tutorial files that you will need at **filesilo.co.uk/bks-890**.

The software basis for this tutorial is Photoshop CS5. A graphic tablet was also used for the painting parts but this is not necessarily needed. By the end of this tutorial you'll discover the means to create realistic and futuristic looking scenes.

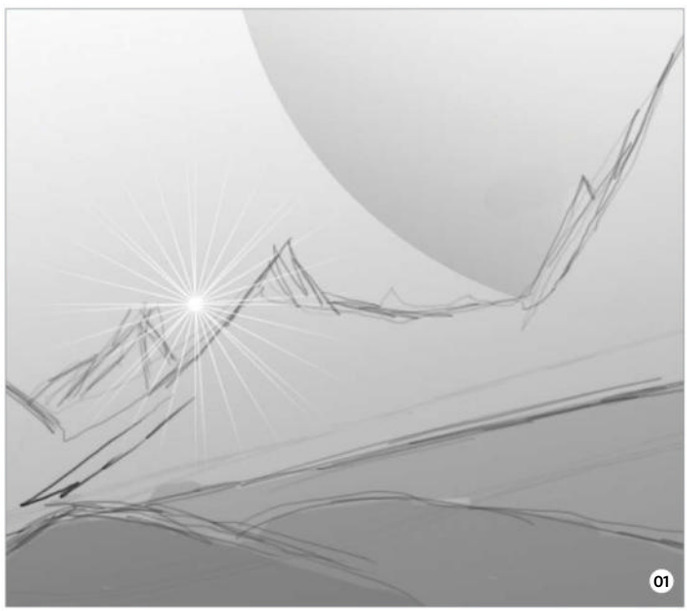
Artist Info

Tobias Roetsch
Personal portfolio site **www.gtgraphics.de**
Country **Germany**
Software used **Photoshop**
Roetsch has been focusing on space and science fiction based images as long as he's been doing art. Self-taught, he improves his skills step-by-step, with a lot of patience and effort.



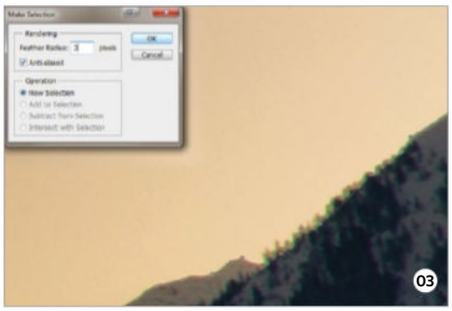
One step beyond

Start to build your extraterrestrial landscape



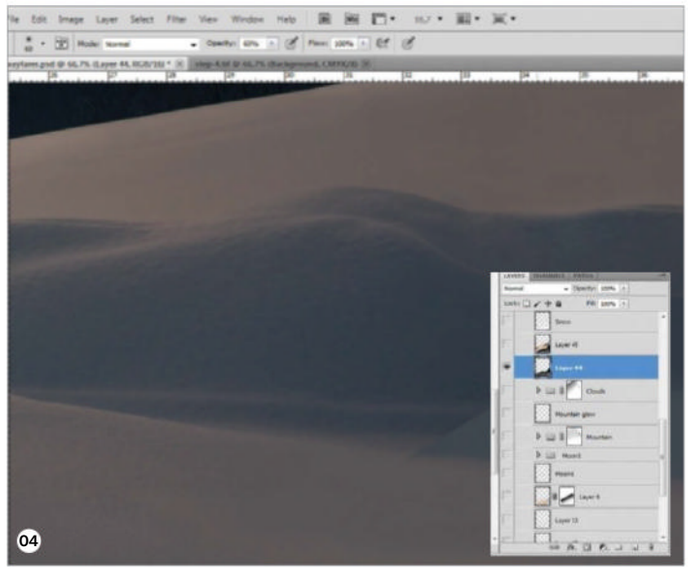
01 The idea It helps to sketch out your idea before, so use a small hard circular brush for the outlines and a large soft brush to visualise the light setting. Find the right place for your light source at the start, then create a new 4,800 x 6,000 pixels document.

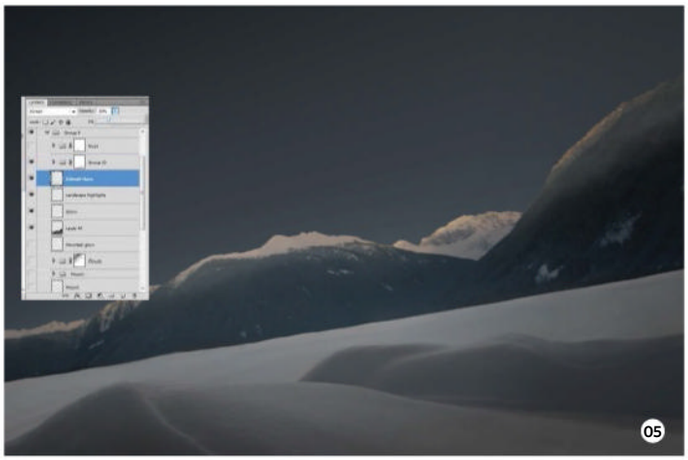
02 Getting started Use a Linear Gradient ('#000000' to '#3e464d') from bottom-right to top-left corners. For the foreground, we're going to use the image 'IMG_5642.jpg'. Add it to a new layer, flip the photo horizontally and rotate it by 10-15 degrees.



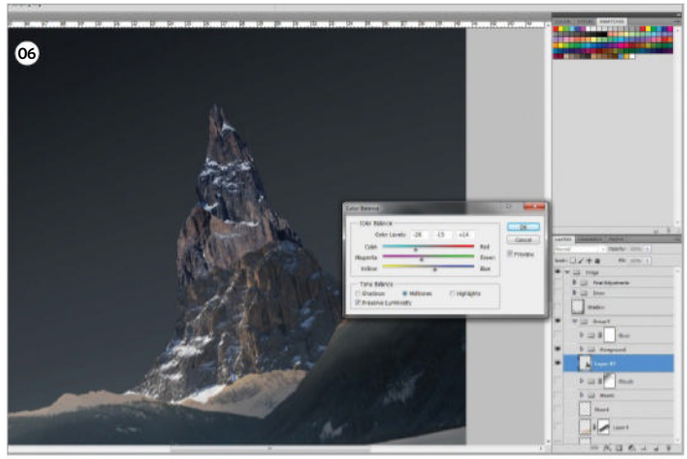
03 Undesired elements We only need the landscape section of the photo, as we're creating our own heaven later. For this kind of task, the Pen tool (P) set to Paths is a good choice. Just follow the mountain outline, make a soft selection (Select>Modify>Feather Radius of 1 or 2 pixels) and cut off the sky portion of the image. Now we're going to remove the buildings, so zoom in to 200% and use the Clone Stamp tool (S). Sample the verge between the snow and the mountains to use with the tool.

04 Make it fit The landscape is still not right because some snow and mountains are absent from the photo due to its angle. Mountains can again be remedied with the Clone Stamp tool. Simply paint in the snow in the left and right bottom corners using a medium-sized soft round brush at around 60% Opacity. To get the right colour for the snow, Opt/Alt-click and chose the one you need from another part of the photo. A texture brush or the Clone Stamp tool will help you to make the snow look more realistic.

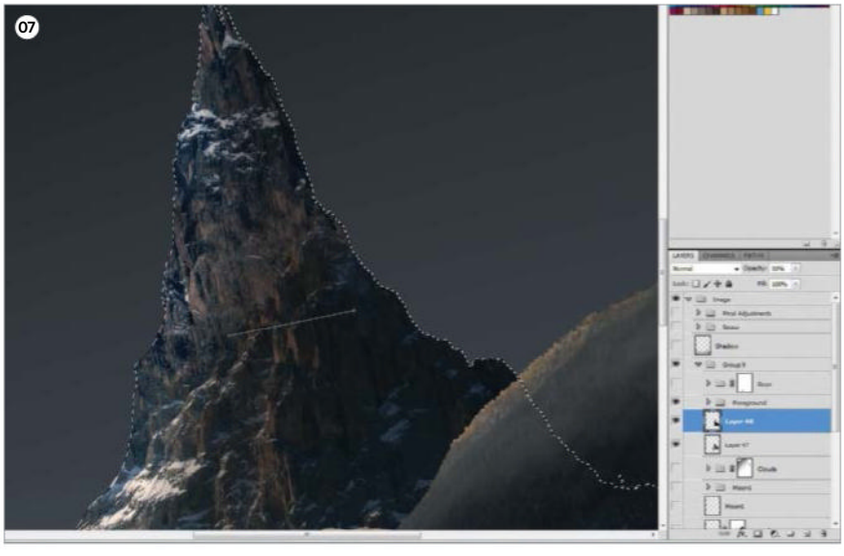




05 Dust and haze The landscape is still looking very clean; a dirty look will help improve its realism. First we have to add haze on a new layer. It's up to you to paint it or to use cloud stocks. If you paint it, use a white soft round brush at a low opacity, creating distant haze. Adjust the layer opacity and use some circular light blue gradients for the foreground, then play with opacity again. Add another layer and paint over the snow parts with a white brush. Set the layer to Color blending mode.



06 Background mountains To draw more attention to the background, we're going to add some extra mountains. Build them using the 'IMG_6402.jpg' and 'IMG_6417.jpg' images on the disc, cutting away unnecessary areas. Layer these by using single parts of the given photos. Once you're pleased with your arrangement, work on the transitions. Adjust the colours by using Color Balance (Cmd/Ctrl+B). For the transitions of your crops, take the Healing Brush tool (J) and fix the edges.



07 Light the mountain To change the lighting around the mountain in the image, Cmd/Ctrl-click the mountain layer thumbnail to make a selection. On a new layer, add a black-to-transparent Linear Gradient from right to left. For highlights, you will need to copy the mountain layer and apply a Brightness/Contrast adjustment with Brightness at 45 and Contrast to 10 (tick Legacy). Delete everything but the left edge of this layer. Add haze, as we did in Step 5, using colours from the highlights of the foreground mountains to make it realistic.

Quick Tip

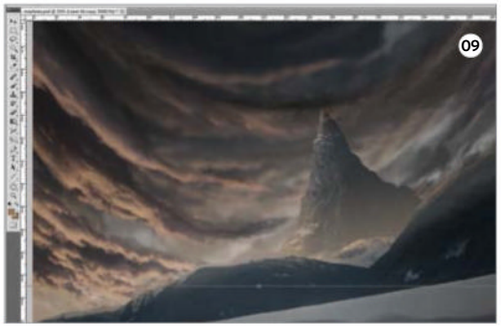
Landscapes are naturally formed. That means they're not perfect and always include some dust, dirt or smoke. This factor is quite important, as applying realistic effects will make the difference between a standard and a good image. Work with blurred extra layers at a low opacity. The subtler they are, the better.

Planet effects

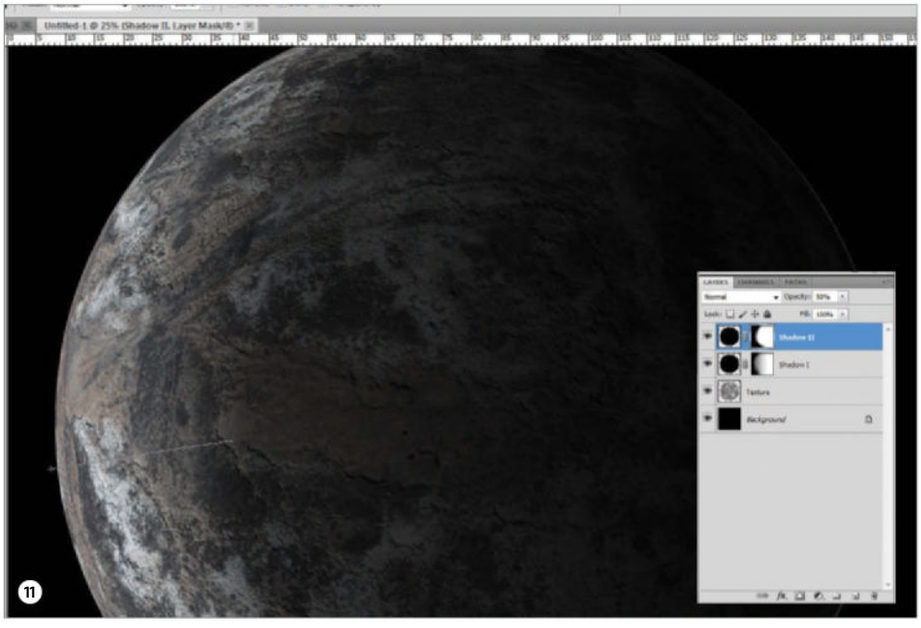
Use Distort filters and textures to create new worlds

08 Vibrant heaven To create a vibrant and interesting sky, you will need to start by using a Linear Gradient (colour '#b19a82' to transparent) from the snow horizon to the top of your highest peak on a new layer below your mountain layers. Open 'IMG_1755.jpg', which will serve as our cloud layer. Copy it in to a new layer and select Edit>Transform>Warp. You will need to change the look to a more dynamic orientation (as we have done in the screenshot). Once you've done this, you are now able to remove all the undesired image elements, as we only need the clouds themselves. Adjust the clouds' colour saturation and darken some of the brighter clouds with the Burn tool (O). Repeat this with 'IMG_1765.jpg', although you will find that you have to flip this image vertically beforehand.

09 Heaven postwork Duplicate your cloud layers and merge them – select the layers you want to merge and press Cmd/Ctrl+E. Apply a Gaussian Blur with a 30px Radius. Some details should be visible, but subtle. Transform (Cmd/Ctrl+T) this layer up to 125-150% of its original size and move it behind the other cloud layers. Duplicate the cloud layers individually and use Gaussian Blur. Set their Opacity to 25% in to soften the whole scene.

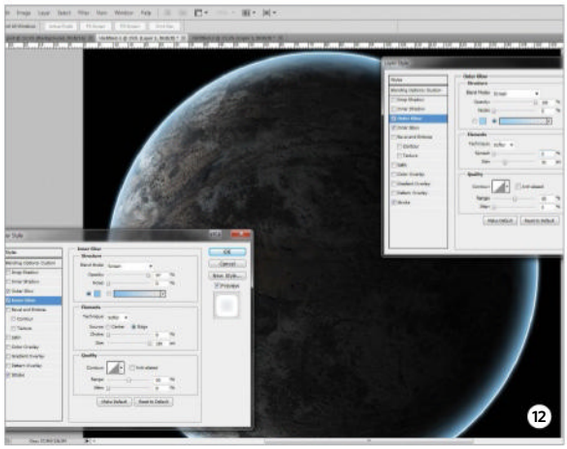


> When you have finished your first planet, adding a second one is always a good idea to help improve the feeling of scale and to give more depth to the sci-fi landscape. Just repeat the steps and size down the new planet to 10% of your original one



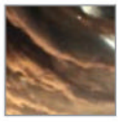
10 Planet textures Now we're going to create a planet in a separate document. In this case we're going to go with a 4,500 x 4,500px new document size. The first thing that you need is a good texture. **Cgtextures.com** has good images for this kind of task – we've applied the 'SoilSand0165' image. Add it to your planet document on a new layer. Duplicate and rotate it by 180°. Rearrange it so it's nearly a square. Merge both texture layers and erase the hard edges with the Clone tool (S) where both parts meet each other.

11 Add the shape Activate the Elliptical Marquee tool (M) and make a circular selection from top-left to bottom-right. Crop parts you don't need. Make a selection of the layer and apply Filter>Distort> Spherize at 100%, Normal mode, twice. Create a new black circle shape layer of the same size. Add a vector mask to this layer and apply a black-to-transparent Gradient tool (G) to delete shadow on the planet's dayside, creating shadow to the right.



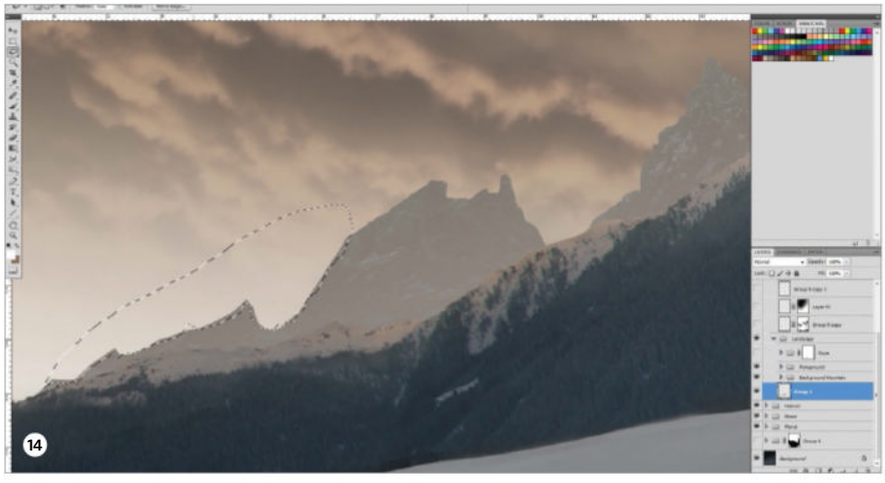
12 Final planetary action Create a new black circle above the shadow. Apply a light blue Inner Glow layer style, set to Screen, 250px and Source set to Edge. Also apply a same colour Outer Glow with the Size at 55px and Range of 50%. Add a white Stroke of 6px Size. Set the entire layer to Screen blending mode. Create a new group (Cmd/Ctrl+G); this is needed to delete unnecessary parts. Add another mask to the group and use the Gradient tool (G) as before.

13 Integration into the scene You can now change the colours, etc, but basically you are finished with your planet, so now add the planet group to your scene right above your background layer. Adjust its colour setting and improve the shadows in order to make it perfectly fit into your scene. A second planet is always a good idea to improve the feeling of scale and to give more depth. Just repeat the steps and size down the new planet to 10% of your original one.



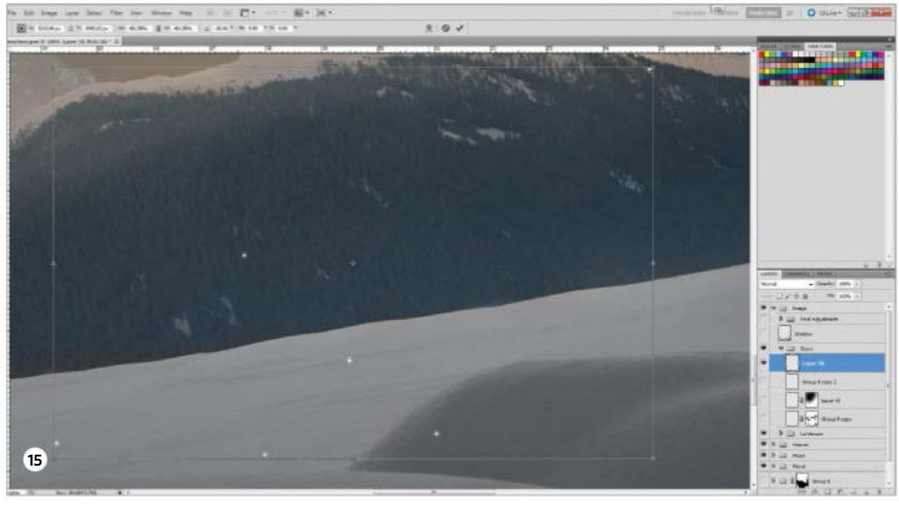
Additional Elements

Use colour effects and additional stock to complete your scene



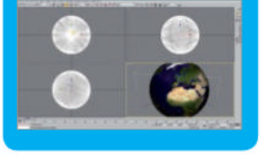
14 More mountains Now add more mountains. Open one of the mountain stocks from the disc and add it to the scene on a new layer below the other mountains. To make it fit into your scene, adjust the lighting – press Cmd/Ctrl+U and set Lightness to +40. Change Hue to a more yellow/red tonality and use the Lasso tool (L) and cut off parts. Now add a Gaussian Blur of a 1-2px Radius.

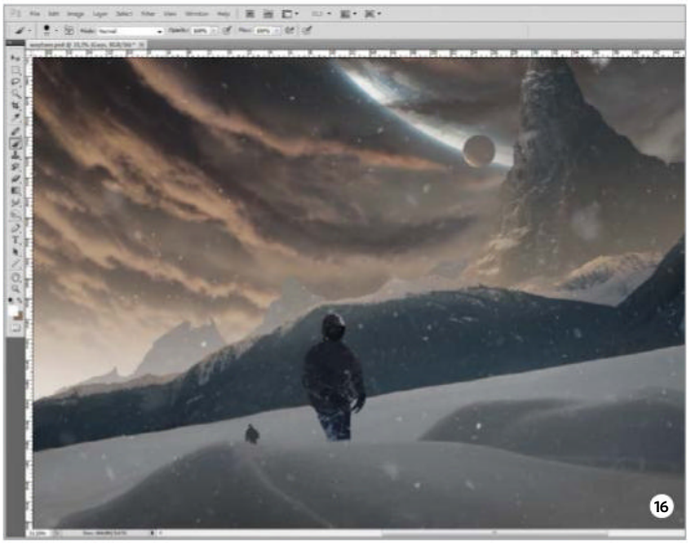
15 Snowflakes Now to add snowflakes in the foreground. Create a new layer above everything else, take a 2px hard round brush and make some random dots. Press Cmd/Ctrl+T and transform it up to 400-500%. Duplicate the snowflake layer, transform its size by 125-150% and set the Opacity between 50-75%, then rotate it. Now merge both layers (Cmd/Ctrl+E) and repeat.



Finding textures

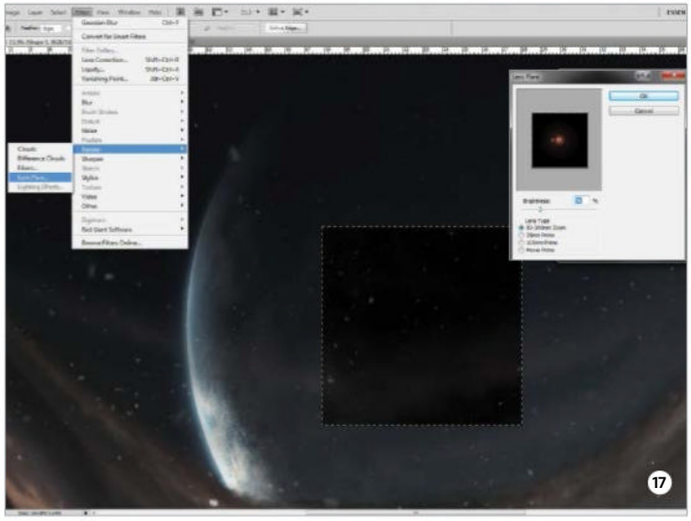
A planet is a good addition to your pictures and makes a normal landscape scene look epic immediately. Unfortunately, the Spherize Filter in Photoshop causes quality loss, especially on the planet's edges. To avoid this, it's useful to work with a 3D program. You only need basic knowledge for that because all you have to do is to create a sphere and add the prepared texture. A good place besides **cgtextures.com** is actually the NASA homepage. There are thousands of high-quality photos that can be used. However, follow the guidelines in this link: **nasa.gov/audience/formedia/features/MP_Photo_Guidelines.html**.

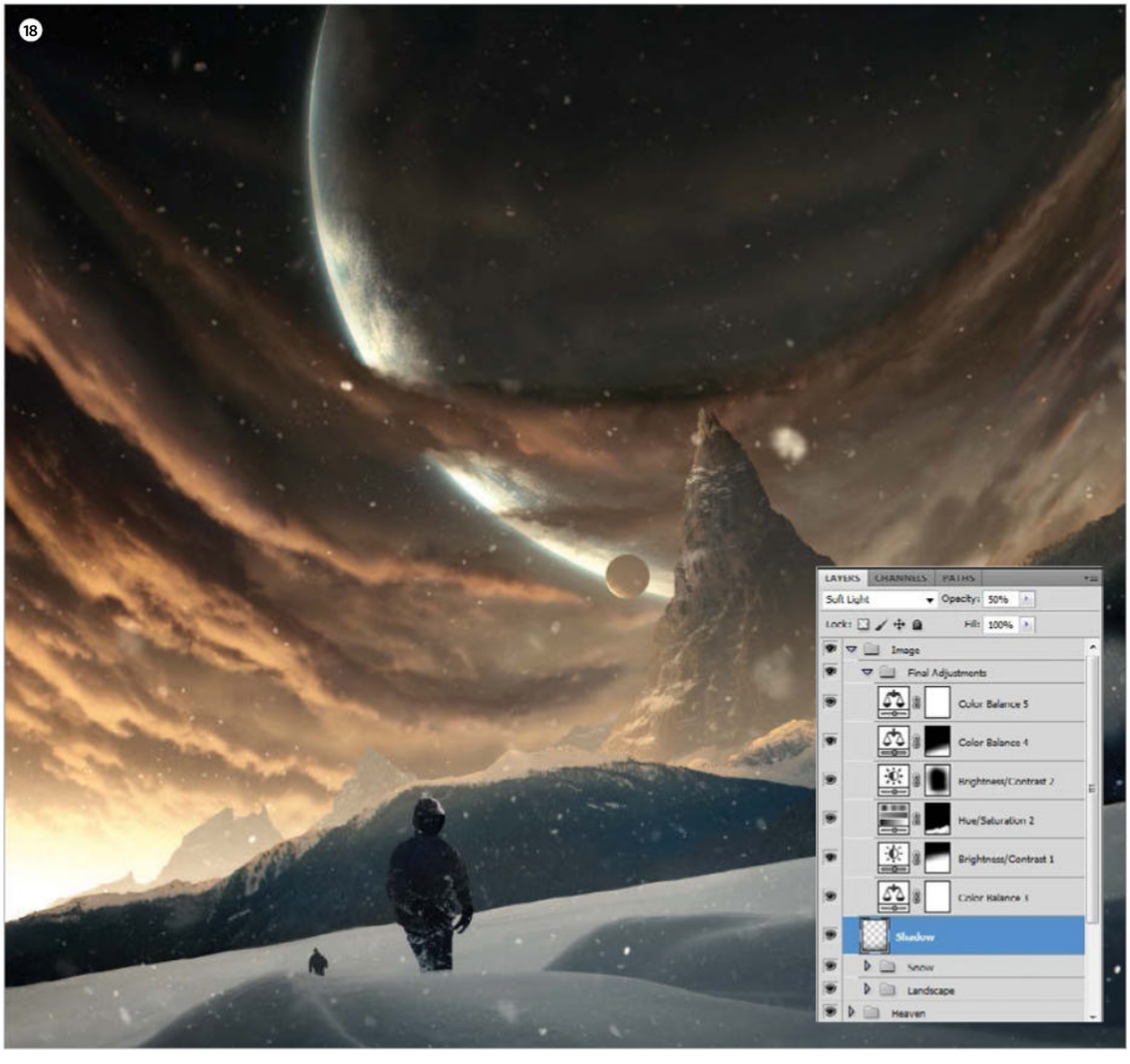




16 Have some fun! It's up to you to add further elements to the image. For example, you can add a single house, some people, an old, dead and frozen tree or some kind of vehicle. Keep in mind not to overdo it. In this case it's better to go with one additional element at the most. There are already a lot of details provided in the scene and the eye of the watcher only needs some focal points to follow. This is your scene, so have fun and add in your own elements as you wish.

17 Stars As we have darker parts above the clouds, stars would be a good addition to the scene. Add a new layer just above your background layer and create a black square shape. Rasterize it, select the shape and add a Lens Flare as shown in the example. Select the layer again and apply a Radial Blur, setting both Spin and Zoom to 100%. Size it down to 15% for larger stars. Set the blending mode to Color Dodge. Duplicate this layer over and over again, changing the size and colour as you wish.





18 Final adjustments Before you start the final tweaks, add another layer above everything else and add more shadows to the foreground by using the Linear Gradient tool (G). Set this layer to Soft Light and change Opacity to 50%. For this image, the adjustment layers we used are Color Balance, Hue/Saturation and contrast layers (Levels or Curves). Place them at the top of your layer structure and play with the settings to get your desired finish.

Concept

The concept was initially created on a sheet of paper. I later took a photograph and continued working on it digitally. At first I thought it would be a horizontal work, but it turned out that it would look better in a vertical position.

Learn how to

- ☑ Model sci-fi elements
- ☑ Texture landscapes
- ☑ Light your scene effectively

Sculpt an epic sci-fi terrain

Photoshop ZBrush

Secret place 2012

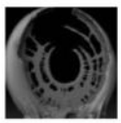
Work exclusively within ZBrush to build all the object elements, then move on to Photoshop to perfect your render

The idea for this project was to create an alien landscape. One evening I was making sketches on a sheet of paper when I came up with an idea of a deserted spaceship, or maybe only its engine. In fact, it looks like a skeleton of a gigantic, extinct animal. Was this animal specially adapted for the creation of a huge machine or was it a product of evolution? Or maybe it's something else? I prefer viewers to make their own minds up.

In this tutorial I will explain how to create an otherworldly landscape using only ZBrush. With this one program you can complete the modelling, create your own alphas (used to model the scene by texturing), create materials, set up the scene, choose an effective perspective and lighting, and even make your final render. The compositing and colour correction will be finished up in Photoshop. Read on to find out how it's done.

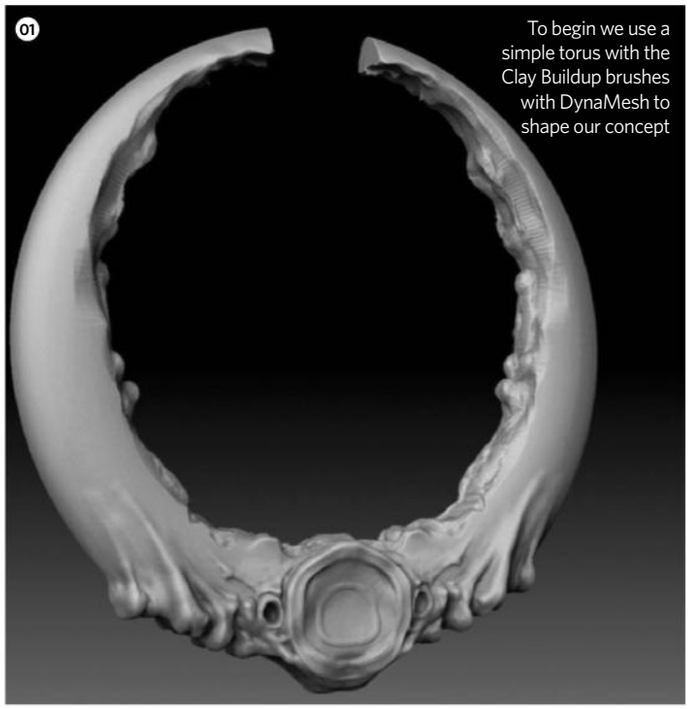
Artist Info

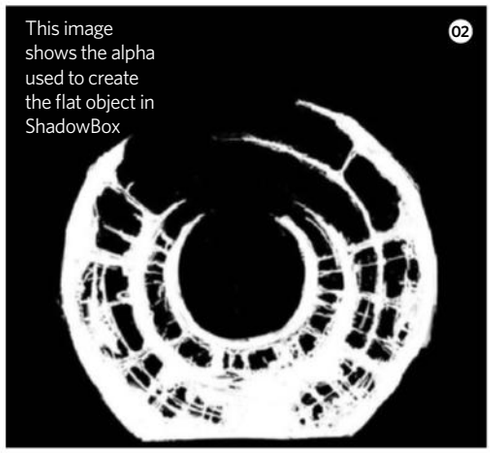
Tomasz Strzałkowski
Personal portfolio site **www.tomstrzal.com**
Country **Poland**
Software used **ZBrush, Photoshop**
Modelling, texturing, lighting and rendering.



Model the foundations

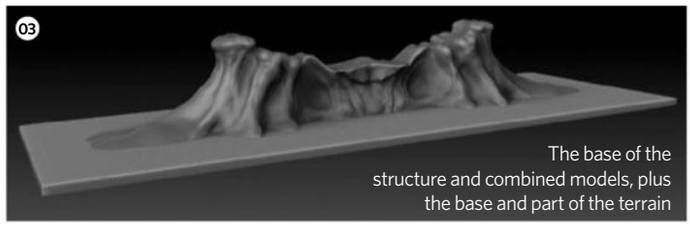
Start with a very basic outline of the whole scene, using simple models





01 Create a base mesh First we will make a base mesh. The first of these is a model of an exterior object similar to skeletal ribs. Use a torus as a base mesh, then the Clay Buildup brush and the DynaMesh tool in ZBrush. Try to make a structure similar to that of the concept. At first it may all look clumsy, but the main idea is to create some base meshes that can be used later to construct the scene.

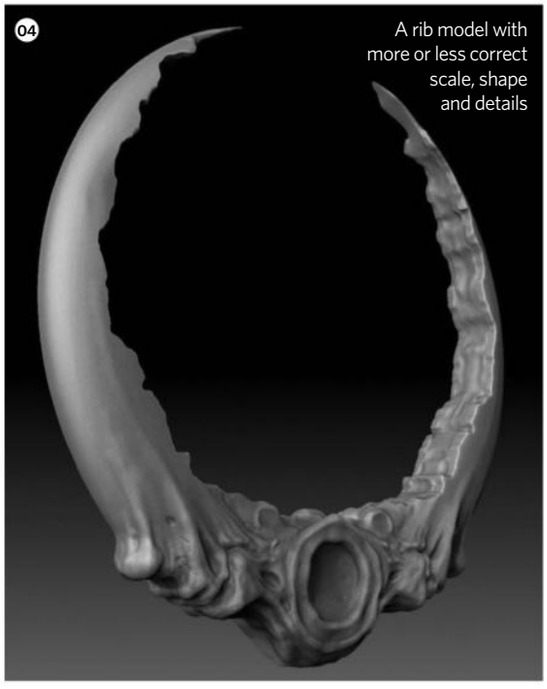
02 Shape the inner circle In order to get a better 3D preview, try to put together most of the main objects of the scene in the early stages. Next create the inside of the circle. Use the concept to create an alpha with the shape of the interior, then the ZBrush tool ShadowBox to get a flat object, which is a great basis for further modelling later on.



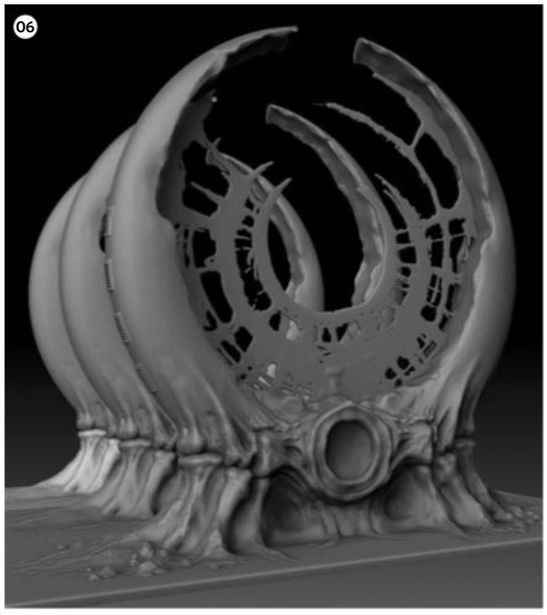
03 Build the basic models Now we'll create the models for the rest of the objects. The base of the circle is modelled with the Clay Buildup brush and the DynaMesh tool. Add a flat box, emulating the ground. Now we need to think over how many parts the main model will be made up of and divide those models in order to get the best quality. It's also crucial that the base is joined with the ground to have a better and smoother transition between the main structure and the ground.

Add some alien detail

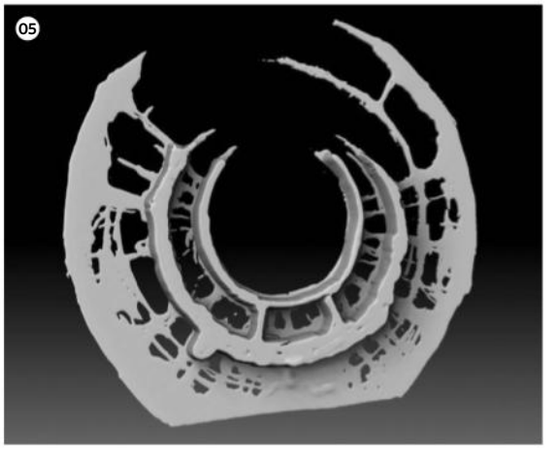
Distribute your key features to convey the image's story



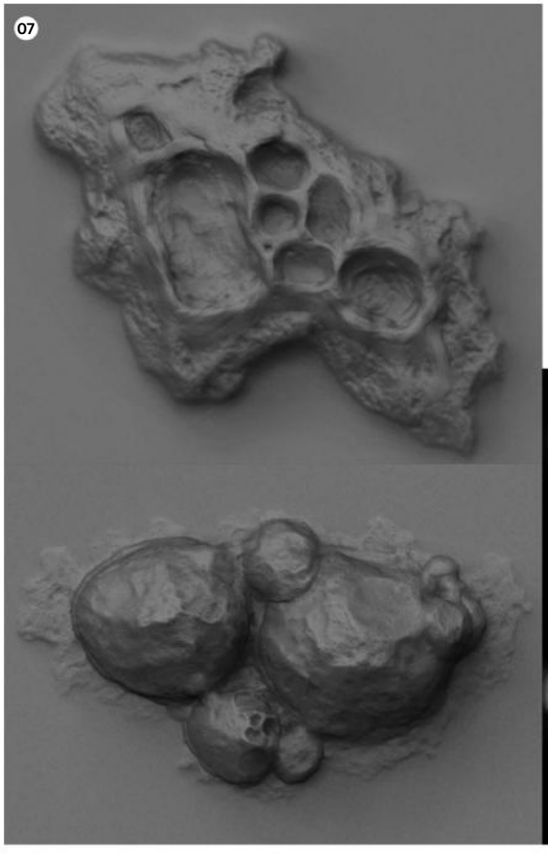
04 Make broad sculpts The main element, which looks like a spine with ribs, needs an appropriate scale with the thickness of the ribs. It's also important for it to look good in the target perspective. It could be that the ribs of the structure contain engines to propel the ancient ship, so they need to be strong and have a secure physical connection to the main spine.

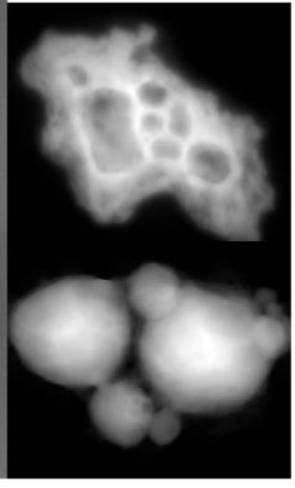


06 Duplicate models to check scale When we have the shapes we want, it's time to copy the objects and put them in a scene, taking the perspective, camera and layout of the objects in relation to one another into consideration. This enables us to tell whether the applied changes are good enough and if the main shapes are close to what is needed. This is a good habit to adopt, particularly when making epic scenes like this.



05 The mechanical inner circle After confirming the shape of the exterior object, it's time to add details to the interior object of the structure. We want the object to have the right thickness and for it to consist of several layers. It needs to look like a corroded and crushed interior of an engine. First paint a mask on this object, which is needed to extrude its thicker sections. Next, use the DynaMesh tool to improve the topology. Add medium and small detail using the prepared alpha base and hand modelling.





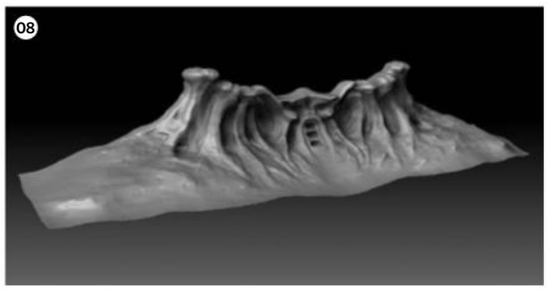
07 Model detail and create more alphas Now the main shapes are sorted, it's time to apply more detailed modelling. Alphas that we can extrude in the object will be very helpful. You can make them yourself very easily within ZBrush. All you need to do is model a suitable shape: go to Projection Master, use the MRGBZGrabber tool and you will have an alpha ready to add to your main model.

Bring detail, composition and the right view

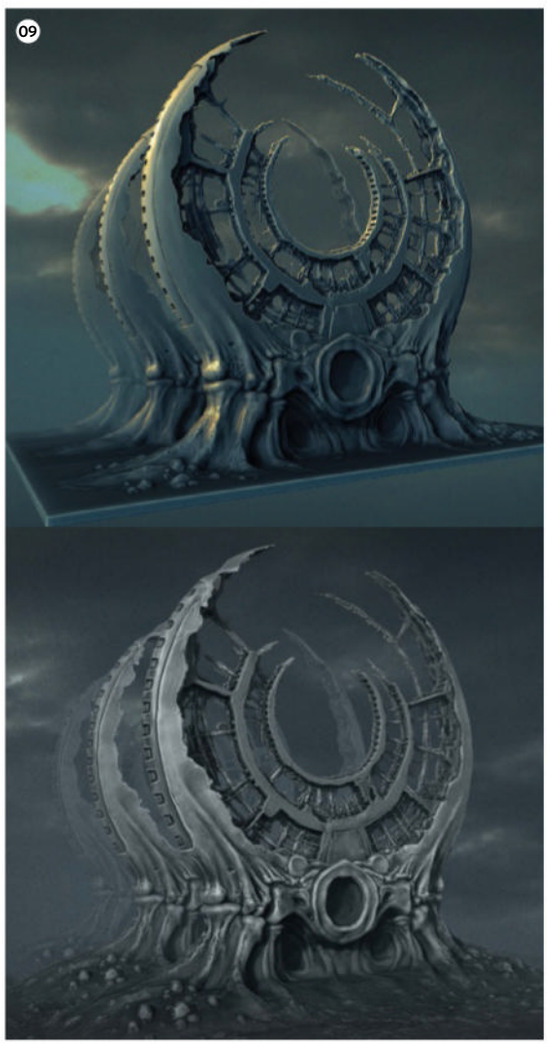
In all my work I keep all the used elements, such as alphas modelled in ZBrush, which I can use for future works. I also create the alpha and brush bases. I try to put together the scene as quickly as possible and do the rendering so I can see how particular shapes look. This way I can also see the details in the composition as a whole. In the early stages I try to put the camera in the right position and choose the best perspective in such a way that I can see how much work is needed for each element. Frequent rendering helps me see the whole picture and enables me to decide whether I'm going in the right direction. During such tests it often turns out that there is a lot to be corrected and new ideas will come to you. The concept is only a starting point and I always hope that the final effect will be better and surprising.

Unify your elements

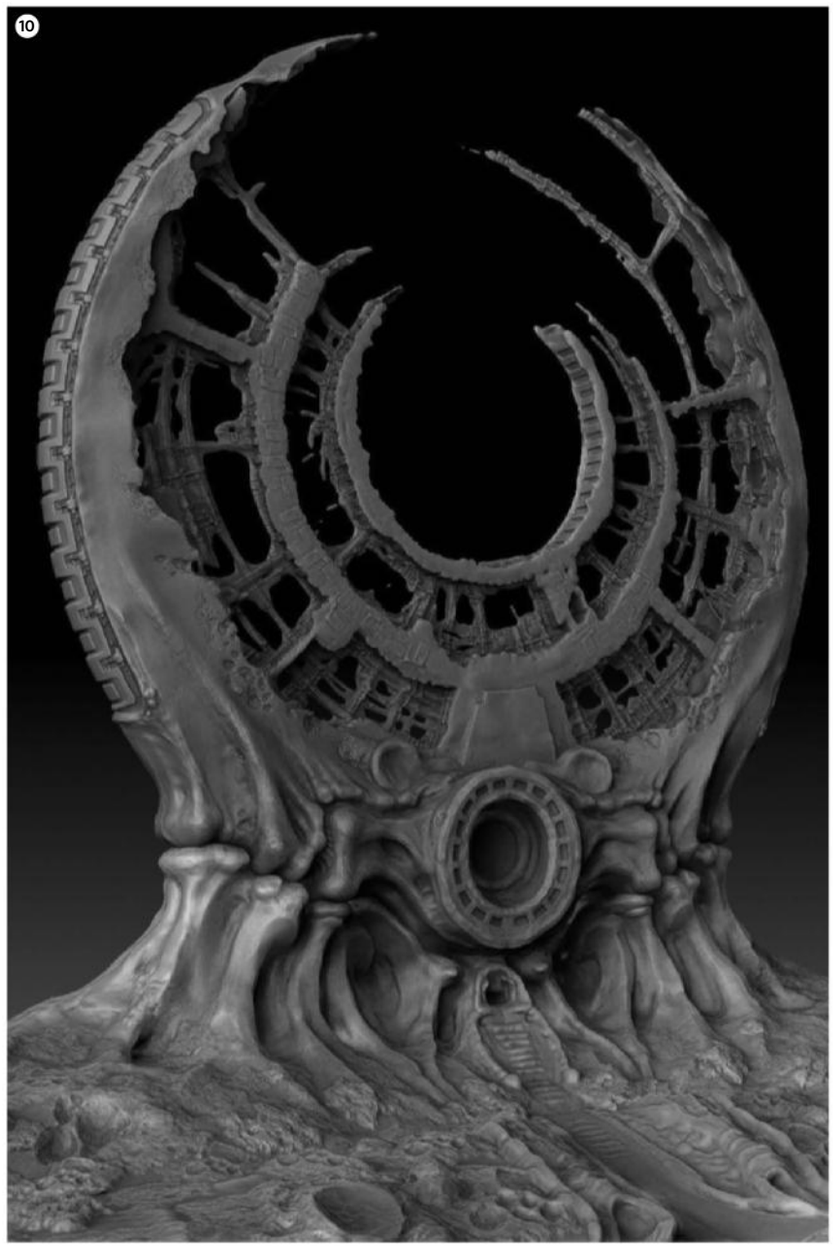
Join your terrain and alien craft, testing all the way



08 Begin to blend the sections The base will also need the right shape and ratio; the initial concept was to have the base flatter, but as you can see both the terrain and the base both ended up being slightly raised. The base has to be constructed in a way that will enable us to join it with the rest of the terrain in the foreground later.



09 Test the lighting and colours The lighting and the climate of the work are very important, which is why during test rendering you should always consider their direction, colour and brightness. The background is also crucial, especially its colours and in this particular case the fog that occupies it. This fog's thickness and colour has a great influence on the whole work.



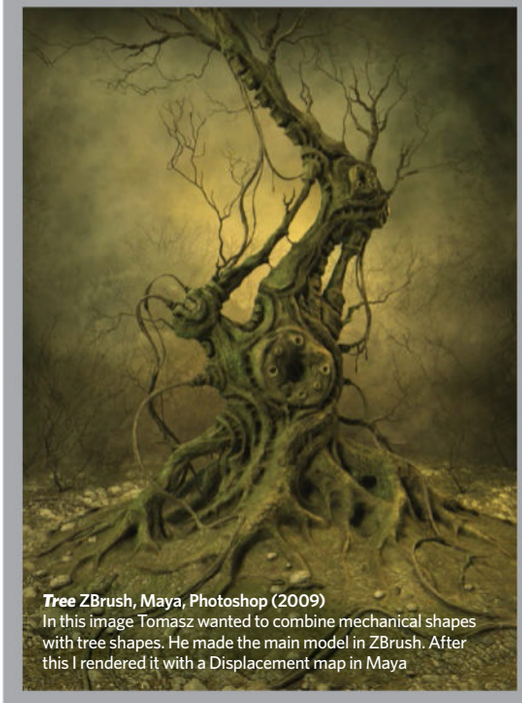
10 Connect the wide terrain Despite having quite a precise idea about the work as a whole, we should still look for the best shapes and details. Constantly make tests of your progress to ensure every element is working. A good example is the elements on the edges of the exterior objects or the details of the terrain joined to the base of the construction. Adding a few figures at the base of the object can show off its scale in an impressive way.

Stick with the process

Usually the first steps go very quickly if you have a vision, idea and a concept you've drawn yourself. Unfortunately, making the final decisions requires many tests and changes. Most difficult are the details and their layout. It's often the case that a considerable part of the work is inadequate and you have to start all over again, but this is what the creation process is all about. When you finally achieve the expected outcome, it's very inspiring and gives you the energy and motivation for further work.

Artist Showcase

Tomasz Strzałkowski
Having worked in the games industry for over ten years, Tomasz is experienced in creating environment graphics, working from a young graphics artist up to an art director. He has been educated in painting and graphic design, but he always wanted something more: he wants to bring his art to life!



Tree **ZBrush, Maya, Photoshop (2009)**
In this image Tomasz wanted to combine mechanical shapes with tree shapes. He made the main model in ZBrush. After this I rendered it with a Displacement map in Maya

Roots **ZBrush, Maya, Photoshop (2009)**
In this image he continued the idea of Tree with a combination of mechanical and organic shapes, but with a different point of view. Unlike with Tree, he created this main model in Maya

Tree Branches **ZBrush, Maya, Photoshop (2010)**
Tomasz had many parts and models from Roots that he wanted to use again. Here he used the same techniques that he learned creating Roots

Form the surfaces

Inject mood and atmosphere

11 Test BPR rendering and composition

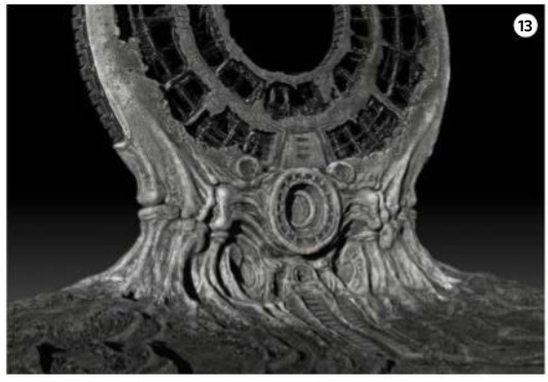
Having modelled the whole work and a series of initial simple renders, we now need a more accurate render with the right camera position and perspective. At this stage, try to choose the optimal direction of the main lighting and select the best rendering values. Thanks to the rendering being completed in layers, we can create a file in Photoshop where all the layers can be put together properly.

12 Begin texturing with the Spotlight tool

When the objects are ready, begin to texture using the Spotlight tool in ZBrush. Obviously, even after the texturing, some changes will need to be made to the model, though hopefully these will be minimal. We'll use several textures that will be manipulated to give us complete control and introduce some quick changes, even if there are changes made to the geometry.

Always test the project

Frequent testing in the target environment and the climate of the work is key. It means arranging and rendering layers with the lighting, shades, depth and colours in Photoshop. You also need to find the right climate. It's often the case that even the smallest changes have a very big influence on the whole work. When I am approaching the end of a project, I often take a long and careful look at the image, trying to find mistakes and thinking about how I can improve it. Any changes made from now on are very thoroughly thought over. It's a difficult stage of the project because you have to know when to stop and finish it, rather than forever making hundreds of small changes.



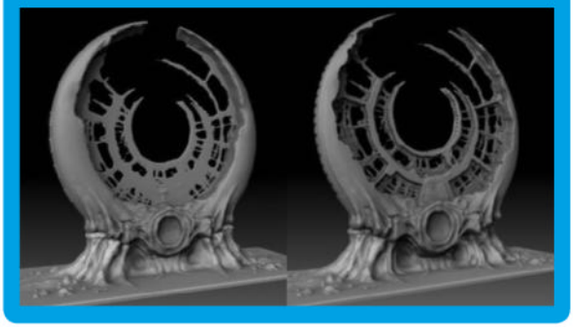
13 Modify materials Now we'll begin selecting the materials. The materials of the main structure, the terrain, some technological elements inside the main circle and on its edges are all a little bit different. In order to increase the details, add noise on the terrain in the foreground and try to select the right values, such as Specular, Ambient or Light Cavit.

Work towards rendering

Refer to your concept and reflect on your aims

Look for the best shapes

The outline of a concept created by our imagination is often the right one, but it's very difficult to find the best way to implement it. On the other hand, it's a very exciting process because it requires you to fulfil a vision that comes from within. Until you find the right version, use one that will make you feel satisfied, at least for a short while. Although the picture in your imagination is vague and it often changes, you will finally find the right shape and you will feel it. It's an inspiring moment!

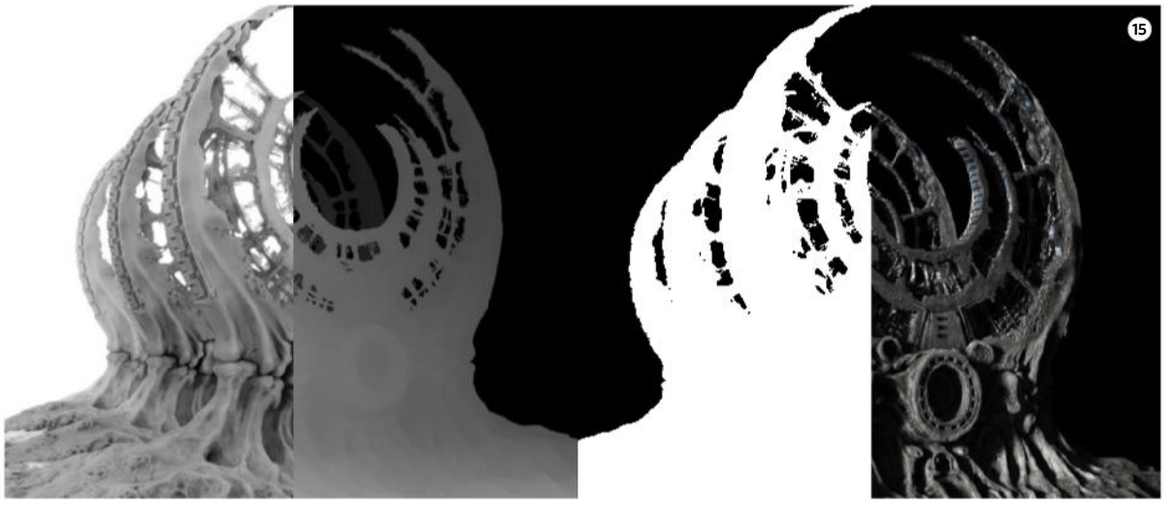


14 Adjust the main lights

The primary lighting, the complementary lighting and the ambient lighting should all be rendered separately and only then combined together in Photoshop. In ZBrush you can get a very nice ambient lighting by loading an HDRI map and clicking the LightCap icon. This way we can get the collection of lights arranged in the space, the same as in the HDRI map. You can edit each one of these lights individually in order to get the exact mood you want.

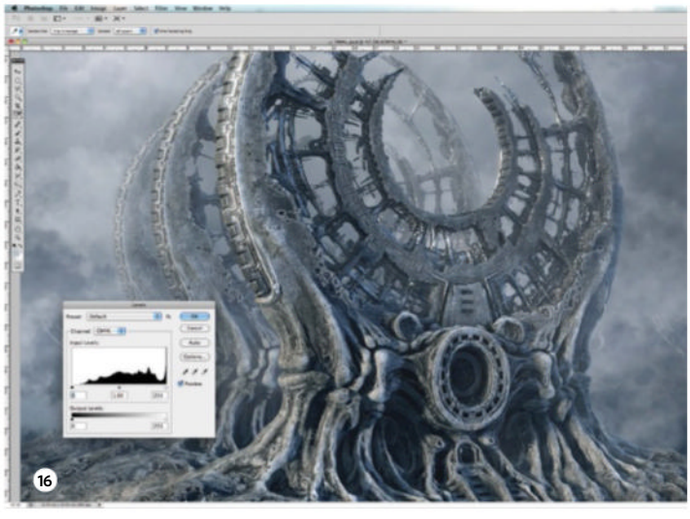
15 Begin the rendering step

After frequent rendering tests it's now time for the final rendering in high resolution. In order to do it, first create a ZBrush project, save all the rendering values and put the camera in the right position with the perspective you are aiming for. Next, load the object. As mentioned before, we will render in layers, which enables us to put them all together in Photoshop. There are several separate layers for the lighting: Ambient Occlusion, Mask, Depthmap and finally the Light Cavity.



16 Move to Photoshop for the compositing

Photoshop enables you to put all those different layers into one final picture. Manipulation of the layers gives you a range of great composition possibilities. You can also create and add a background, fog effects, as well as correct the colours. This is the stage when the work acquires the right climate, and is finally refined and finished off.



Final thoughts

As is often the case when creating original images, I came across many problems, and while I was looking for solutions I learned a lot of new techniques. If you want to achieve a desired effect, you have to go for that goal whatever the problems – technological or inspirational – you may face. With the right amount of work and involvement, most problems can be solved and each and every obstacle you overcome will teach you something new and increase the range of your skills. I hope you've enjoyed the tutorial and take some inspiration from it.

Design destructive cityscapes

Awakening 2011

Photoshop

A great pile of rubble is pretty much essential for a post-apocalyptic artwork! Rubble can be found and photographed on construction sites in any large city, though take care and ask permission beforehand if it's on private land

This guide is all about manipulating subjects and scenery into an evocative digital matte painting. More specifically, you'll discover how to create a post-apocalyptic world using a combination of photography, stock, Photoshop, a graphics tablet and your drawing skills.

The theme for this piece of work comes from Vitaly Alexius's numerous urban-exploration trips, adventures with his wife, Meeshka, stock imagery, as well as original photography shot by Alexius himself. His primary inspiration comes from his journeys across the abandoned cities of Siberia, where he was born and lived for much of his life. To shoot your own stock you will need either a basic point-and-shoot camera or a DSLR. When starting to create both original photomanipulations and digital paintings it is imperative to assemble a massive database of stock imagery that you can use. This can be done by going out every day and taking photos of everything interesting you come across: buildings, clouds, rocks, trees, cars, etc. You can also use stock imagery from the internet for those more specific images that are tricky, or even impossible, to get.

Photoshop is the best software for digital photomanipulation since it handles brushes, layers and effects extremely smoothly – far better than any other program. The newer versions are the fastest when it comes to loading many layers, but you don't need CS6 to complete this tutorial. You can emulate the scene that we have created here, but why not use your own stock and using these techniques come up with your own truly unique apocalypse?

Artist Info

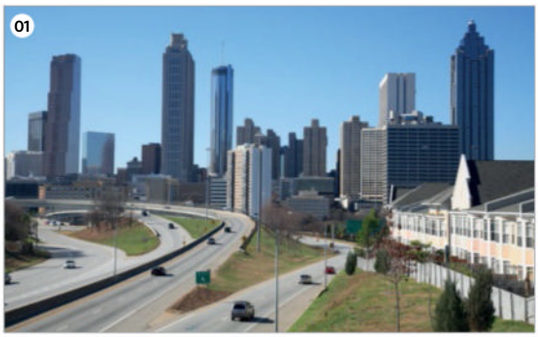
Vitaly S Alexius

Personal portfolio site
http://vs.darkfolio.com
Country **Toronto**
Using a graphics tablet and Photoshop, Vitaly creates digital paintings, graphic novels, CD covers and more.

Apocalypse now

Transform stock into a stunning scene of destruction

01 Find the right background We begin by finding the perfect city backdrop for a post-apocalyptic, skyscraper-filled, decaying world (the Thinkstock '98025209' image). Stock of cityscapes can be shot locally or, for something more specific, can be bought online. It's important to purchase licensed stock, because copyright laws always apply.

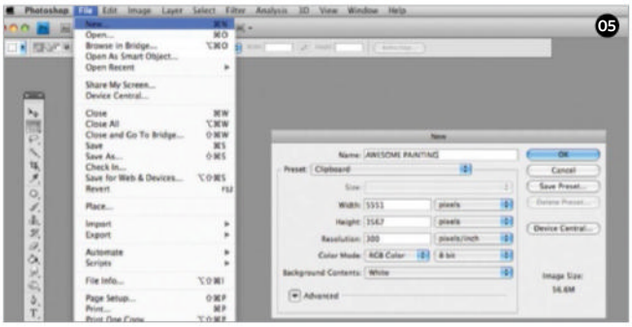


02 Source the middleground Next, we use an already broken-down building from our own image library. Perspective matching is very important, though if you are creating a ruined landscape, the buildings will be tipping sideways and collapsing/twisting anyway, so a linear perspective needn't apply. However, a sense of organised chaos is a must.

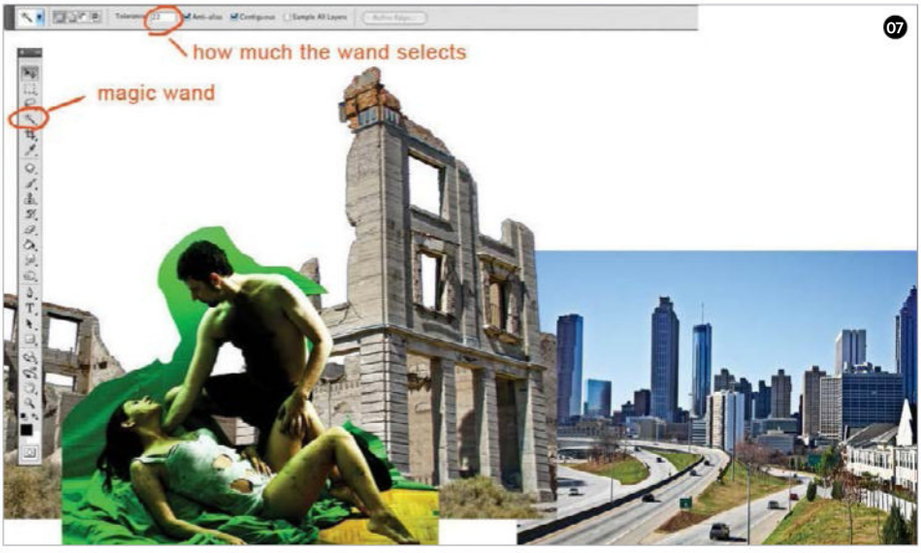
> Having a library of images will come in handy as stock for future projects too, so make sure you always have a camera on you, just in case you see anything while out and about

03 The survivors For the characters in the painting it is best to photograph friends or collaborate with professional models/photographers who can be found on sites like **modelmayhem.com**. These photos can be used as reference or put directly into the painting, depending on how fast the image has to be done and on how realistic or stylised the final look needs to be.

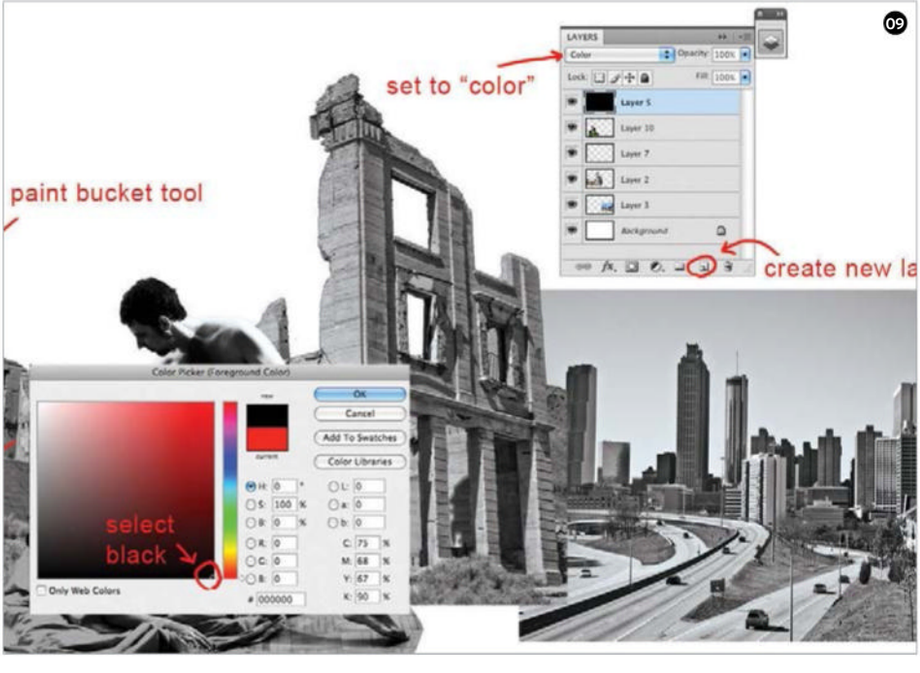
04 Foreground A great pile of rubble is pretty much essential for a post-apocalyptic artwork! Rubble can be found and photographed on construction sites in any large city, though take care and ask permission beforehand if it's on private land. Having a library of these sorts of images will come in handy for future projects too, so make sure you always have a camera on you, just in case you see anything while out and about.



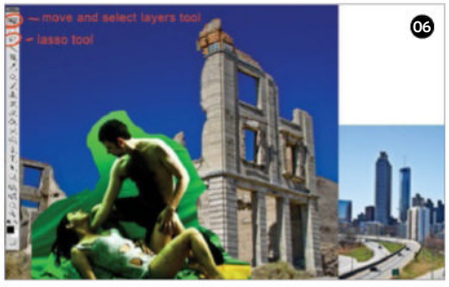
05 Put it together Open all of the photographs that you will be using in Photoshop. Create a new file, setting image Width and Height to something over 3,000px (in fact, you can pick any desired size; as long as it's more than this resolution, you will later be able to print and exhibit it anywhere). Also set the Resolution to 300dpi to ensure that it is high enough for display.



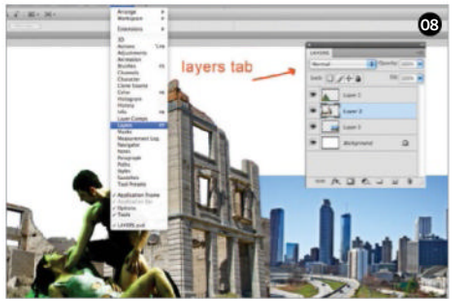
07 A little magic To copy the image to a new layer in its new file, simply hit Cmd/Ctrl+C to copy and then Cmd/Ctrl+V to paste. You can select and move layers around using the Move tool – found at the top of the main Tools bar. Unnecessary elements (such as the greenscreen behind the two models, for instance) can be selected using the Magic Wand tool and removed with a tap of the Delete key. Tidy up edges, if needed, with a small Eraser tool.



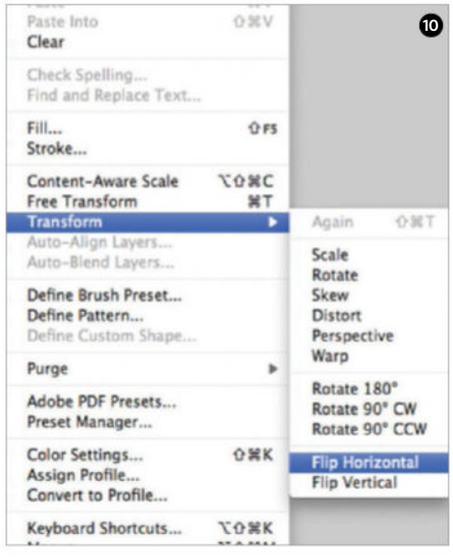
09 Colouring with layers Create a new layer using the New Layer button located at the bottom of the Layers palette. Next, set this to Color in the blending mode drop down. Fill the layer with a black colour using the Color Selection tool, which can be found at the base of the Tools bar, followed by the Paint Bucket tool.



06 Tool basics Using the Lasso tool, you can now crop, cut and paste the found background, middleground, foreground and character images all into a single file. The selections do not have to be overly neat at this stage, as edges will be refined in upcoming steps. To select additional items with the Lasso tool, simply hold down the Shift key while using it. On the other hand, if you want to take things away from the selection, hold the Opt/Alt key.



08 Layers The Layers dialog is a godsend for photomanipulation projects and, as you'd expect, extremely useful for managing layers. (To see the Layers palette if you can't already, go to Window> Layers.) By clicking on a specific layer in the Layers palette, give each one a recognisable name like 'Background city', 'Robot' or 'Happy cloud', etc. It makes layer organisation a whole lot easier when the painting reaches upwards of 100 layers.

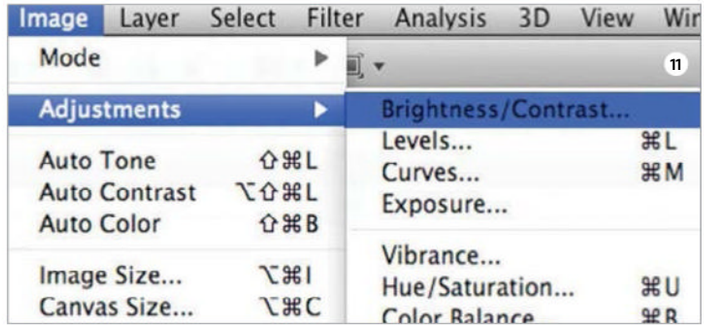


10 Transform layers If it is needed, individual layers can be flipped upside down/sideways, scaled, rotated, warped, distorted, etc, using the comprehensive Edit>Transform menu. These options are fun to play with, but at the same time extremely useful for resizing layers and correcting perspective.

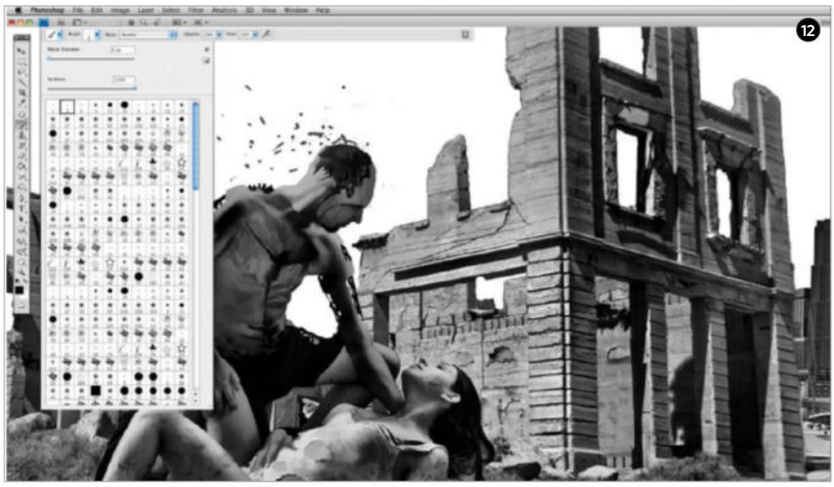
Quick Tip

Making the painting black and white from the beginning helps manage contrasts. Even before Photoshop existed, painting masters would kick off with a black-and-white sketch to help establish values, contrasts and shadows, before advancing to painting the scene in colour.

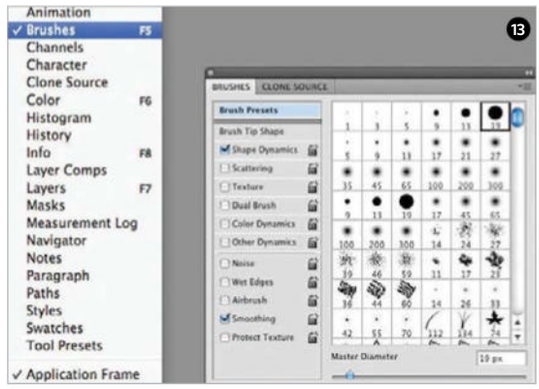
11 Adjust contrast Select an individual layer and then head to Image>Adjustments>Brightness/Contrast to play with the tonal settings of each layer. Repeat with all until the contrast of each looks more striking. Try to keep the saturation/contrast fairly consistent across the various elements so it feels as if they belong together in the same scene. There are many useful and powerful adjustment options to play with in Photoshop that are often overlooked, so feel free to explore them throughout this tutorial.



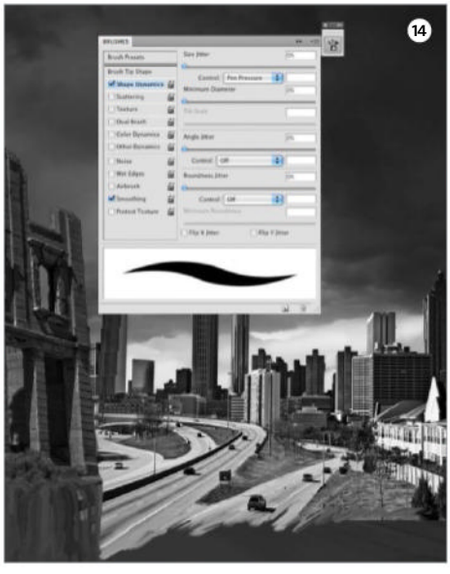
12 Brushing up Using the Brush tool efficiently requires a great deal of practice. Don't be discouraged if the brushstrokes don't come out perfect the first time round. Mastery of the Brush tool comes only with years of experience. Use the Opacity parameter to vary your strokes for more diverse effects.



13 Brush tool in depth Go to Window>Brushes to call up the Brushes dialog. This panel calls up many more possibilities and is great for tablet users, as it enables you to manipulate brush dynamics, pressure, angle, etc, to the nth degree. This menu takes a bit of experimentation to get used to, as instead of a real-world, solid paintbrush we are using a digital representation of a brush limited to specific options depending on the selection.

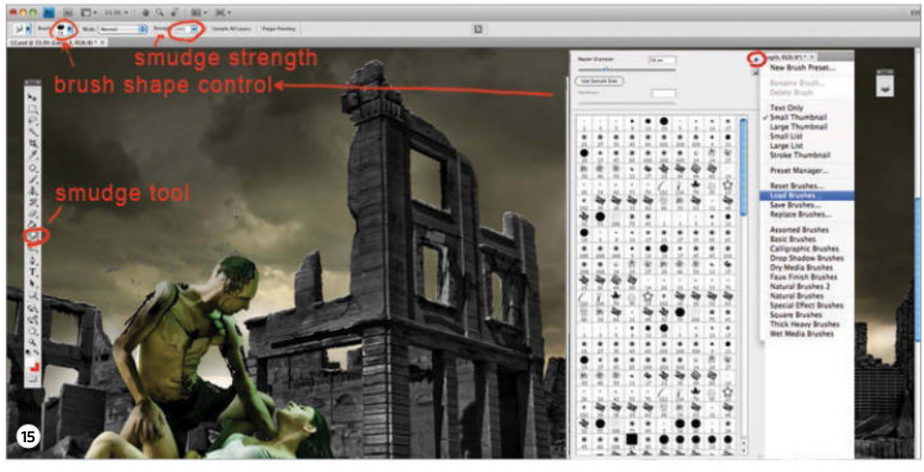


14 Shape Dynamics Clicking on Shape Dynamics in the Brushes menu gives you the option of controlling the brush via the Pen Pressure parameter; make sure that this option is selected. Enabling this integrates the tablet pressure (ie how hard the pen is pressed against the tablet surface) with brush thickness. Select the Smoothing parameter if you want smoother brushwork. Other options here make the brush more or less 'jittery'. Have a play around and experiment to see what works for you!



> Using the Brush tool efficiently requires a great deal of practice. Don't be discouraged if the brushstrokes don't come out perfect the first time round

15 Smudge tool When an artist works with oil paints, the brush naturally smudges the paint across the surface of the canvas and each brushstroke blends into those beside it. To replicate this effect best in Photoshop, various custom brush shapes are used with the Smudge tool. Many varied custom brushes can be found via a quick image search for free or can be purchased in packs online at a range of art sites, such as deviantART and CGTextures.

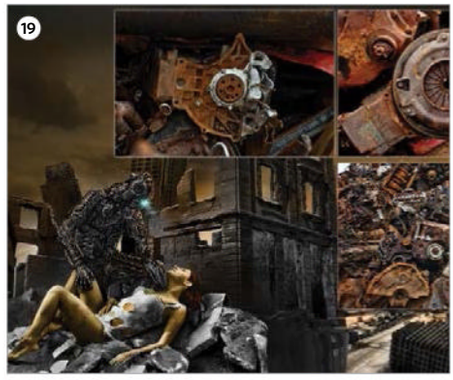


The end is nigh

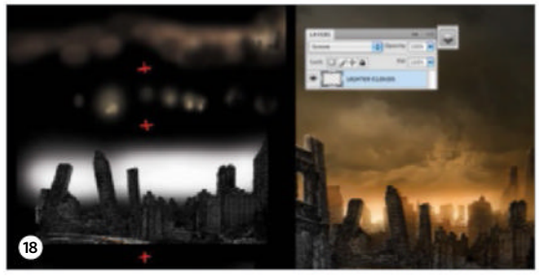
Apply final touches to 'ruin' your image

16 Head in the clouds The more detailed images of clouds and buildings are taken from the archives and image licencing websites. Using the Brush and Smudge tools, as before, they are re-painted to look more post-apocalyptic. Using the selection and Move tools, skyscrapers are slanted and placed behind other skyscrapers to develop depth.

17 Extra textures Rubble stock is inserted into the front of the painting, beneath the main characters to boost tactility. Various junk and debris is scattered on the road, which is a shot of a busy LA highway, while a collapsing bridge adds more drama. All of the textures are inserted and re-painted to make them look ruined. The Color layer at the top of the layer stack is used to give the scene consistent colours and a variety of large round colour brushes are applied for finer details.



18 Lighting effects New layers are painted with the Brush tool and set to the Screen blending mode to make dust clouds of light between buildings in the distance. The opacity of each layer is tweaked to perfection; take your time with this. Next, several more buildings are added to the painting to bulk out the city, and new layers are painted with a large brush set to Multiply blending to make specific parts of the picture even more dark and gloomy.

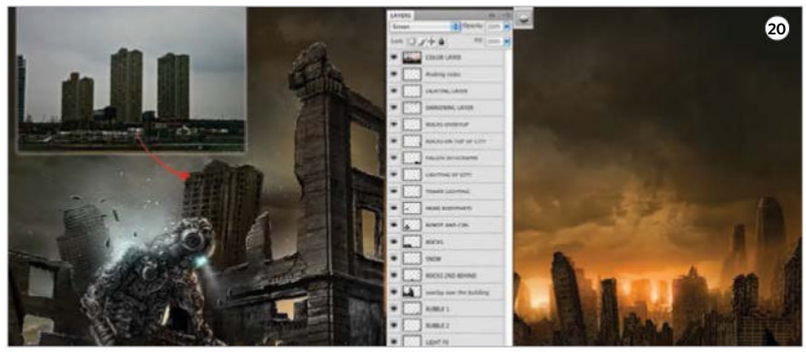


19 Mechanical suit Next, a number of textures which were shot in a metal scrap pile in Nova Scotia, Canada, are used to create the mechanical outfit of the 'robot'. Once these are imported, a great deal of work is done, carefully cropping them into the suit and painting many extra parts by hand to emphasise wear and tear. Use your own creative eye here to piece together the textures, always bearing the harsh environment in mind.

Quick Tip

Use the Load Brushes option to install new brushes. Use the brush and Smudge method to smooth out all brushwork, zoom in and out lots by hitting the Cmd/Ctrl and '+/-' keys. Cmd/Ctrl+Z is a lifesaver if you make a mistake and want to undo.

20 Final touches To wrap up this post-apocalyptic piece, an extra building is inserted into the background to fill a space above the kneeling robot figure. Last-minute details are painted in with the Brush tool here and there, such as extra shading on the foreground rubble and some fiery glows cast by the flames in the distance. The painting now has many layers, each one named appropriately for greater ease if any post edits are required.



Build fantasy architecture

Blood Temple 2012

Photoshop Painter

Alexander Thümler teaches you how real-world references can inspire your fantasy buildings and scenes

In the field of entertainment design and illustration, you are almost always faced with the prospect of creating virtual worlds that include some kind of architecture, or even whole infrastructures. Whether it is science fiction art or a classic medieval fantasy image, from the very first second the person looking at this kind of illustration should be convinced that the world he or she is observing could actually exist. Even if there is magic going on or you can see floating buildings in the air, if the artwork contains a consistent visual style then every kind of architecture in every kind of environment will work.

That is why it is so important to be inspired by actual civilisations, both ancient and modern. Fantasy architecture, for example, is often inspired by gothic elements like castles and cathedrals. You can create a new fantasy scenario by combining more than one civilisation and their architectural styles. As long as the elements hang together in a way that is physically possible (even if the physics are based on magic), the viewer has to believe that what he or she sees is real – even if it is not. Natural patterns, random abstract shapes or objects you might never have thought of using as building blocks before can also inspire a scene, but nonetheless physical functionality is the most important aspect of making fantasy scenes seem possible.

In this illustration, we take inspiration from exotic ancient architecture. Old, lost civilisations like the Mayans and Aztecs can be truly inspiring when it comes to creating your own fantasy architecture. Explorers are still finding undiscovered ruins to this day, and the fact that we know little to nothing about their use makes the Mesoamerican motifs that they use a visual shorthand for mystery and magic, while allowing us to integrate fantasy elements into something that's conceivably from the real world. You can find all the tutorial files that you will need at **filesilo.co.uk/bks-890**.

Artist Info

Alexander Thümler

Personal portfolio site
alexander thumler
Alexander is a self-taught concept artist and illustrator with a love for scif-fi who studied design in Nuremberg. He does live paintings with an audience or on the internet via Livestream.

Explore ancient ruins

Develop your idea from sketch to finished piece

01 Basic sketch Start to paint some very simple shapes and silhouettes with a big rough brush to find a composition that works for you. It's not necessary to care a lot about the architecture or even the perspective – just try to find a way to place all the elements you want to show.

02 Shapes Once the basic sketch is done, start thinking about the general perspective and architectural elements you want to use in the painting. Pick a thinner brush to define the shapes with a bit more detail and bring a little more design into the abstract structure.

03 Value It's important to bring out focal points as soon as possible, as they lead the viewer through the whole image. Use a large soft brush on a layer set to Overlay to define dark and light areas and work out the basic values of the painting. This will give the painting a visual guideline.

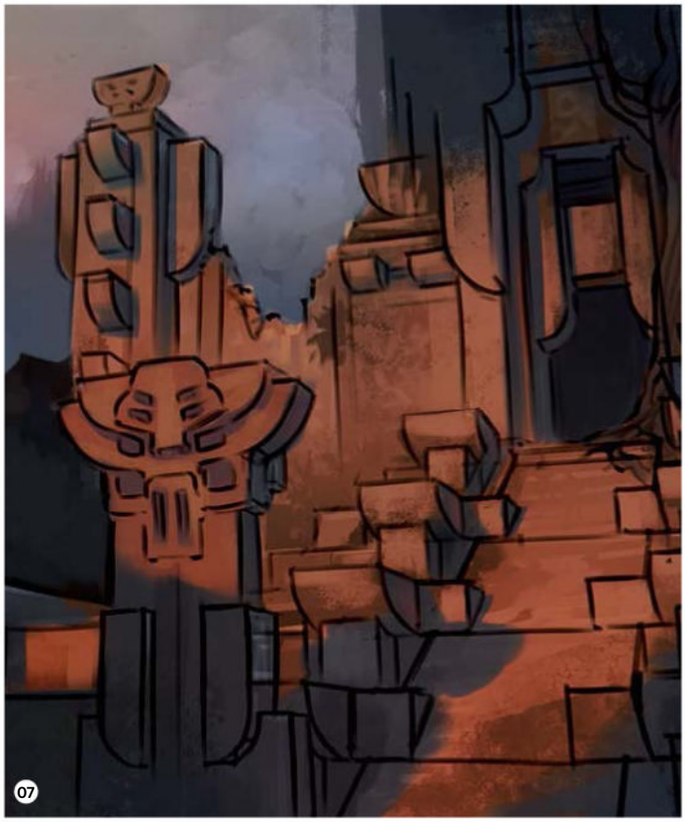
> "It's important to bring out focal points as soon as possible, as they lead the viewer through the whole image"

04 Mirror Start sketching in more details of the architecture and the plants growing around the structure to work out the scene. Flip the canvas horizontally and vertically in order to check out the composition and the general tilt of the image from time to time.

Mirroring

During the process of painting, it often happens that you get too used to your image and overlook mistakes in the composition. It's important to flip the canvas horizontally and vertically as often as possible during the whole working process to get a renewed view of the painting.

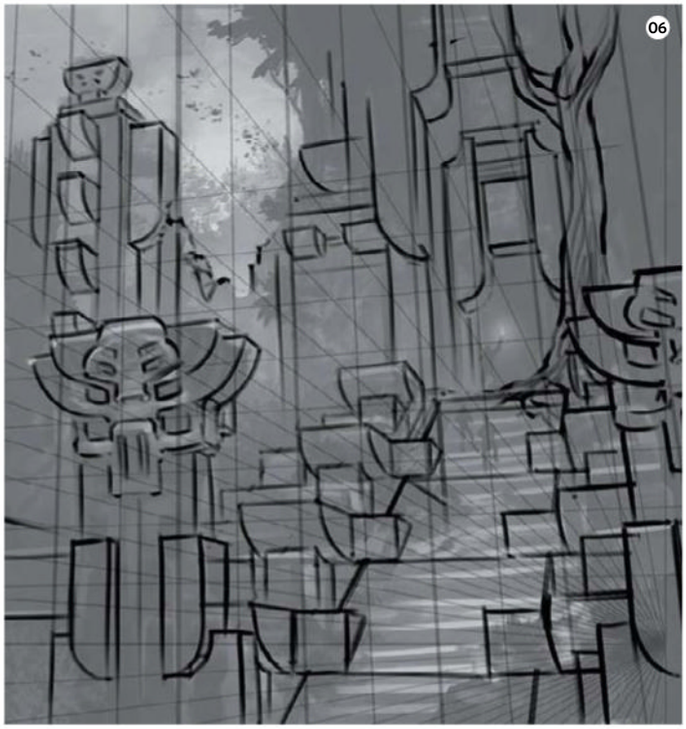
05 Finished thumbnail Don't spend too much time rendering the thumbnail, as this is just one of many thumbnails that you can draw before starting the final illustration. Bring in some last-minute details to refine the composition and highlight focal elements by using fast and loose strokes.



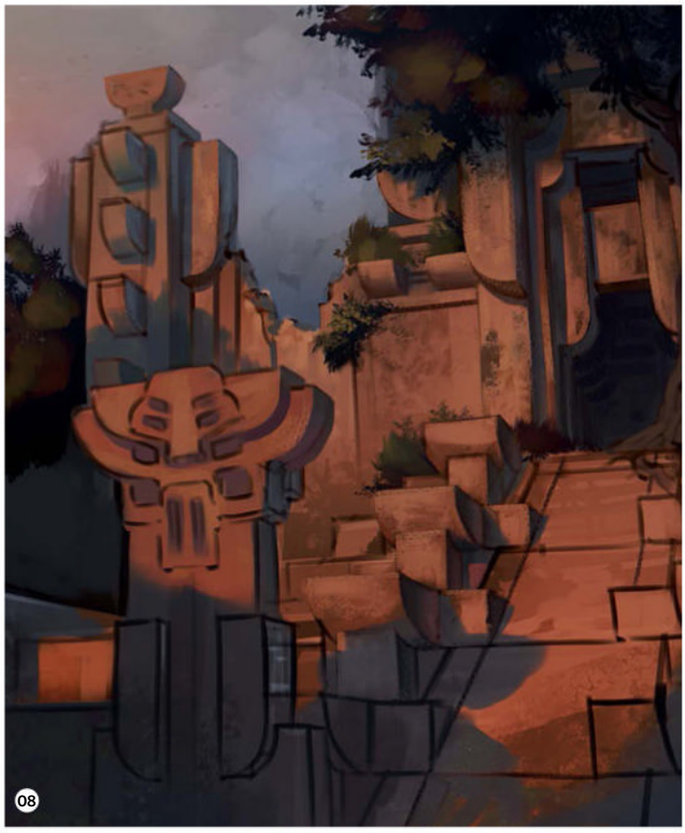
07 Colour In this step you have to think about the atmosphere and general lighting of the scene to figure out how these things affect the material the temple is made of. Once you're happy with your idea, start painting in the basic colours of the temple and the shadows underneath the line art.

Saturation

To maintain balanced values, it's important to hide the colour of an image from time to time and see it completely desaturated. The perception of tones is often influenced by colour overstimulation and the colour contrast.



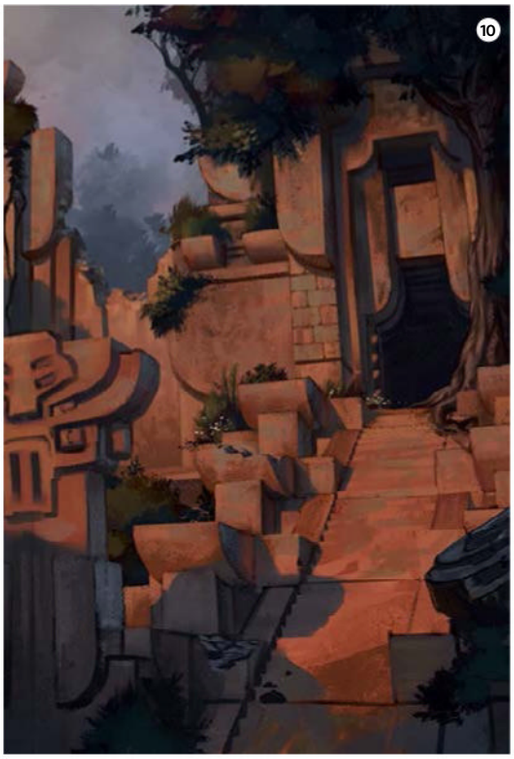
06 Line art Now that the architecture and perspective are roughed out, you can draw a simple perspective grid with one, two or even three vanishing points and begin to draw the architectural line art on a separate layer. Constructing three-dimensional objects is not easy, so take your time.



08 Light direction Now, drop the line art onto the canvas and start to paint over it. Always keep the angle of the light in your mind to prevent mistakes from occurring. Create some rough brushstrokes as a raw base for the foliage of the trees and bushes growing around the temple. A low-lit, evening angle for the lighting adds mystery and menace.

09 Develop depth
Continue rendering the architecture as subtly as possible and bring depth into the image by painting faded trees or other parts of the temple into the background. Make use of the lighting angle and atmospheric perspective in order to enhance the eerie atmosphere of the scene.

10 Destroy the temple Once you've rendered the surfaces, you can start destroying the architecture. Paint some debris, broken walls and statues. Add some colour variety to the boulders to make them look old and ruined. Remember, you're aiming for the look of somewhere that has been lost for thousands of years.



11 Refine the details Use a thin brush to draw reliefs, gaps and cracks on the walls to make the whole building look ancient and ruined, and add some more leaves and roots to show that this is an abandoned place. You will want the viewer to wonder what happened to the original inhabitants and feel vaguely unsettled.

> "Make use of lighting angle and perspective to enhance the eerie atmosphere...You want the viewer to wonder what has happened here"

Step Back

It's often easier to improve the composition of a painting by looking at the image in a very small format. Because there is a loss of information due to the scaling on the screen and the fixed number of pixels, it's advisable to view the image on the whole screen and step back. In this way, even the smallest details contribute to the overall image.

12 Build up the story To help the viewer get into the scene, add some story elements. Here, explorers are shown making their way into the dark doorway at the heart of the image. We put them in with the image flipped to check that they read correctly.

13 Accents Bring more life into the scene by adding additional trees, grass, bushes, flowers and ferns. Accentuate some elements of the ruined temple by adding a little bit more saturation if they merge too much with the whole structure.

14 Hint at a terrible secret Another detail often seen in ancient ruins and temples is art itself. Temples often have a lot of murals, reliefs and statues to show rituals and other events that happened in the past, or prophecies that will influence the future. Draw in some relief details on the walls – these details feature giant, magical figures demanding worship and sacrifice from smaller, more human-looking ones.

15 Last-minute values To finish the painting, use a Color Balance adjustment layer to make all the colours mesh with each other perfectly. Finally, use a layer set to Overlay to highlight the focal points once again, bringing out the contrast on the stairway, door, figures and temple artwork.

Fantasy civilisations

How one artist combined two cultures to create a fantasy third

Thomas Cole was famous for his paintings of the US during the 19th Century, but he also produced a series of paintings called 'The Course of Empire' in which he charted the imaginary evolution of an ancient city. It is a great example of combining real-world motifs (in this case Greek architecture and art, along with the American frontier) to create what is now an iconic representation of a fantasy scene and its evolution.

Artist: **Thomas Cole**
Title: **The Course of Empire: The Savage State**
Date: **1836**
Location/Owner: **New York Historical Society**
By combining different landscapes like a forest, the sea and mountains with abstract elements like a very soft and surrealistic fog and intense lighting, Cole creates a world which couldn't be any more likeable or magical. The people are typical of the Native Americans that would have been depicted in frontier art of the time, but Cole has a surprise in store for his audience...

Artist: **Thomas Cole**
Title: **The Course of Empire: Destruction**
Date: **1836**
Location/Owner: **New York Historical Society**
Previous images show this scene evolve from a pastoral idyll into a classical city. In this image we see it pulled down. Statues are broken and buildings burned, and the civilisation collapses, ready for the final phase.

Artist: **Thomas Cole**
Title: **The Course Of Empire: Desolation**
Date: **1836**
Location/Owner: **New York Historical Society**
Finally, the great civilisation ends up desolate, abandoned, and forgotten; waiting for a future archaeologist to unearth it. Cole represents the final phase in a way that's reminiscent of real Greek ruins, provoking his audience to wonder at the nature of this imaginary civilisation.

> Use a layer set to Overlay to highlight the focal points, bringing out the contrast on the stairway, figures etc

Artist Info

Jennifer Cirpici

Personal portfolio site **www.breakingcanvas.com**

Country **Netherlands**

Software used **Photoshop**

Jennifer is a self-taught graphic designer and illustrator from the Netherlands. She studied graphic design, has worked for several big agencies like Saatchi & Saatchi and Leo Burnett, and is currently a freelance artist.

Create fantasy worlds

Fantasy World 2011

Photoshop

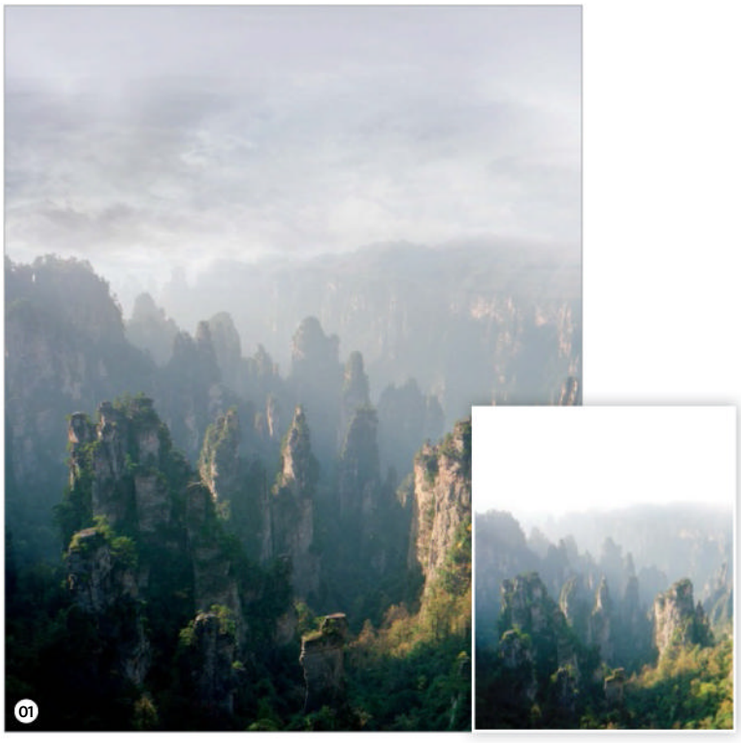
This workshop is fundamentally inspired by the lush mountainous scenery in the movie Avatar

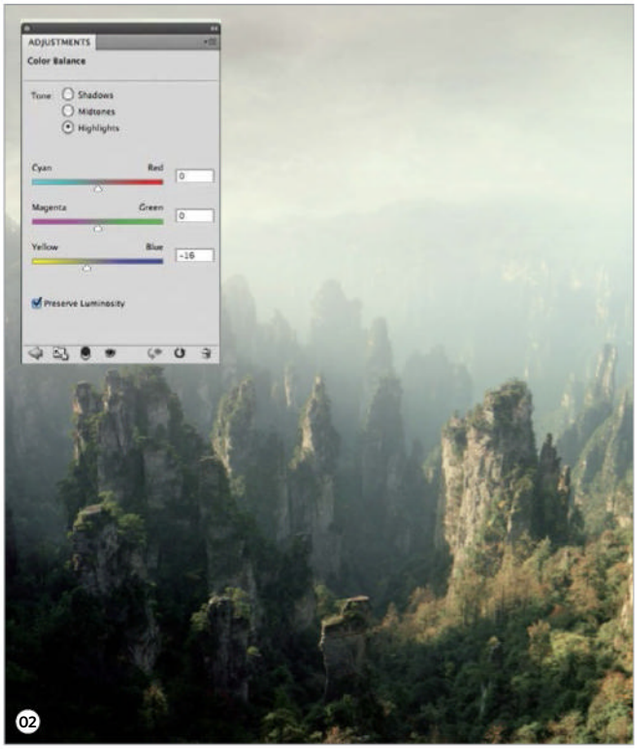
What you will learn in this tutorial are several basic but essential techniques like blending, colouring and painting over a scene comprising multiple photos. This workshop is fundamentally inspired by the lush mountainous scenery in the movie *Avatar*. The Zhangjiajie Mountains, located in China, inspired the makers of *Avatar* to create the floating Hallelujah Mountains; they also inspired us and we used stock imagery of this range to create this artwork. We'll go into how you can combine real and painted elements in depth, while keeping things easy to follow along. We'll also look at how you can blend stock easily and how essential colouring is when it comes to setting an atmosphere. This guide will not only help you to create these *Avatar*-esque floating mountains, but also to improve your future photomanipulations. Unlike the scenes created for the film, we will only be using Photoshop to achieve these effects. We recommend, however, that you look up inspiring *Avatar* scenes first to get a few more ideas for the composition. You can find all the tutorial files that you will need at **filesilo.co.uk/bks-890**.

Create a lush environment

Manage your stock, colours and blending

01 Get your head in the clouds First find some mountain stock. The sky is white in our image and we want to add some clouds. We search for good sky photos, paste them over the landscape, then blend using layer masks as well as Overlay, Multiply and Normal modes.





02 Bring in some colour For a green tint, create a new layer filled with '#f6f6e5' and set to Multiply. Next, create a new layer set to Multiply, but fill this with a bluish gradient at 36% Opacity. Use Curves to up the contrast and tweak the greens in Color Balance.

03 Mountains and birds We now add in some mountains from another stock photo. Set the layer's blending mode to Multiply with an Opacity of 68%, then make the mountains a little greyer so that they all blend well together. Blur the mountains with a 5% Gaussian Blur filter because they are further away and this will create a greater sense of depth. Finally, find some nice bird images and paste them into the composition, using the Edit>Transform options to match the scene's perspective and scale.

Quick Tip

You may find that you get stuck sometimes when working, and lose inspiration or motivation to continue with your artwork. Some of the best solutions are to either sleep on it, take a couple of steps back from your screen or, as we did in this tutorial, just change the perspective by flipping horizontally.

05 Gradient shading Select the floating mountain and, with a black-to-transparent gradient, create a shadow at the bottom of the scene, fading out towards the top of the image. Lower the Opacity to 28% and repeat this step. Select parts of the mountains from the background and paste into the bottom to give it more texture. We'll go into more depth with this in a moment. At this stage, we feel we're not quite there yet with the composition, so to give it a fresh look, we go to Edit> Transform>Flip Horizontal.

06 More depth and highlights To create depth and highlights we use a small hard brush, painting with black where we want to generate a bit more shadow. We set this layer to Soft Light blending and lower the Opacity to around 70% with the brush Flow at 70% too. We follow the same process with a white hard brush, this time creating highlights with the layer set to Overlay. We use this technique with all our photomanipulation projects to great effect.

04 Floating mountains With the help of CGTextures (**cgtextures.com**), we source some free landscape stock images and blend them together to produce a mountain, reminiscent of those in *Avatar*. This is very much a matter of artistic licence so you will have to decide on the scale, shape and which materials constitute your mountain when you come to constructing it. As previously demonstrated, use layer masks to bring elements together, as this will help to blend effectively using black and white brushes. Further, make sure that when you are using these brushes you are working with a low Flow value as this will also help with blending.

07 Add some clouds To add realism to the floating mountain and to establish its significant scale and airborne position, we add in some clouds, placing them around the bottom of the mountain. Render the clouds with channels, put them on a new layer, invert (Cmd/Ctrl+I), select the black parts (the clouds) with the Magic Wand tool and erase the rest. Blur the clouds with Filter>Motion Blur to lend them a greater sense of movement.

08 Shadows, accents and eerie mist As this project goes on, and the more that you work on the mountain, the more likely you are to notice that it requires a bit more of this and a bit more of that as you work. At this stage, we decide that it needs more shadows and highlights. Repeat Step 6 and go into more detail using a smaller brush; it's time-consuming work, but this effort will pay dividends when it comes to the final result. To generate a mist effect, take a soft brush, sample the colour from the background with the Eyedropper tool, and brush over the mountain and background, before switching to Soft Light blending.

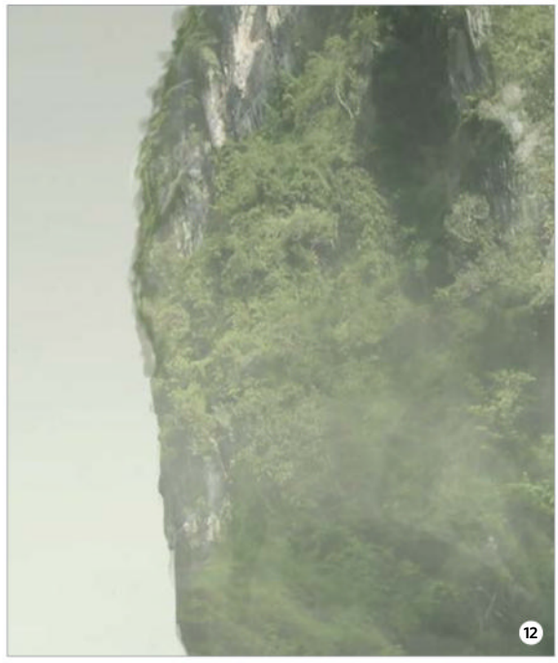
Make the fantastical real

The secret is in the details

09 Add some plants In *Avatar*, the floating islands have long vine-like plants to help people move from one 'island' to another; we're also creating these in our scene. Take a hard brush and draw some simple lines to get the basic plant forms from one mountain to another. Then, with a green colour, add more lines over the first set and then a final group of lines in a lighter tone for shading. You can also set some of the lines to Overlay.

10 Mountain vegetation We are now going to add some shady plants at the bottom of the scene and around the base of the floating mountain. You can do this very simply by taking the hard brush again and, with a grey colour, drawing in plants that are hanging down. The trick is that they don't have to look exactly like plants when zoomed in, but when you zoom out they should look like the silhouettes of trees/shrubs etc. You only have to make these plants as complicated as you want to.

11 Additional highlights We come again to a point when we're adding more highlights – you can never get enough of them! The more you have, the more detail you'll have in your scene and the better it will look. We're also adding a bit of green here and there with a hard brush. By doing this we are giving it a more digitally painted feeling, but don't forget to make sure that everything blends well together, with no one area stealing the show.



12 Work on mountain edges Because we could never have rendered the rock in a way that made plants at the edges look good too, we need to add our own flora to the mountain edges. This will better blend the mountain into the sky and reduce that copy/paste feel. Again, you don't have to paint the plants/leaves very realistically as they're in the distance and shrouded by mist. Make sure not to use one colour – always add highlight/shadow tones too.

13 Splash out! Before making a waterfall, look up some reference to get an idea of the basic structure. As you will see, there isn't too much detail in a waterfall – it's basically a white sort of cloud. Take a soft brush at around 150px and brush in a thick line in white, then apply Soft Light blending at 25% Opacity. This is the start of the waterfall and shows how it's floating. We now add a couple of finer lines either side of the waterfall to serve as edges.

> We need to add our own flora to the mountain. This will better blend the mountain into the sky and reduce that copy/paste feel. You don't have to paint the plants realistically as they're in the distance and shrouded by mist

The final touches

Wrap up your fantasy world

14 Waterfall details With the soft brush sized around 500px, we brush once more into the waterfall, but we lower Opacity to 28% and set blending to Soft Light. For details, zoom in and use a hard brush to make a couple of small strokes, then on a new layer, add a series of lines. If they look too hard, you can blur them a bit. Add vertical lines until satisfied then apply some smoky mist underneath the cascade.

15 Rainbow effect Waterfalls often have a rainbow due to light refracting through the moving water. Create a rainbow with your hard brush, as per the screenshot, lowering the Opacity to 80%. Change the layer to Soft Light and apply a slight Gaussian Blur, so that the rainbow doesn't draw too much attention. With the soft brush set to Soft Light, add a little more mist coming off the waterfall.

16 Mountain shadow Because it's a floating mountain, we need to add its shadow to the area it's floating over. We decided to put some shadow on the rocky column closest to it and on the ground, with the soft brush set to black at a lowered opacity. Make sure you never do just one shadow; for realism, apply several layers of shadow that becomes darker the closer it gets to the object. Don't mess too much with the blending options when it comes to shadows, as they need to be almost fully black.

> We add more mist so that the mountain merges more seamlessly with everything else in the scene

Quick Tip

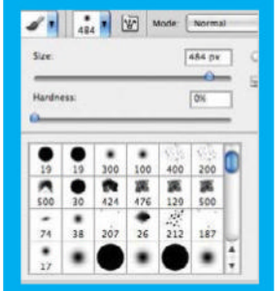
When you digitally paint, you can use the Rotate View tool to navigate your whole screen. This way you can paint more detailed elements without having to turn your head. It makes everything much more comfortable.

18 Final touches Now you can play with Brightness/Contrast, Levels and Curves adjustment layers. What we also do to get focus in this artwork is to create a black-to-white Radial gradient set to Soft Light and 30% Opacity. The white circle goes wherever you want to draw focus. Create a new layer, fill it with black and go to Filter>Noise>Add Noise (12.5% and Monochromatic). You should set this layer to Soft Light and just 5% Opacity. Last but not least, you will need to wrap up the image by using a Smart Sharpen filter.

17 Anything you mist? As one of the final steps, we are going to add yet more mist around the floating mountain and make the vegetation around the edges a little greener. We add more mist so that the mountain merges more seamlessly with everything else in the scene, plus it also gives a surreal and mysterious mood. Never make your mist too white though – instead use a colour in the same shade as the background, so give it a green tint here. Switch mist to Soft Light blending and set the Opacity to 30%.

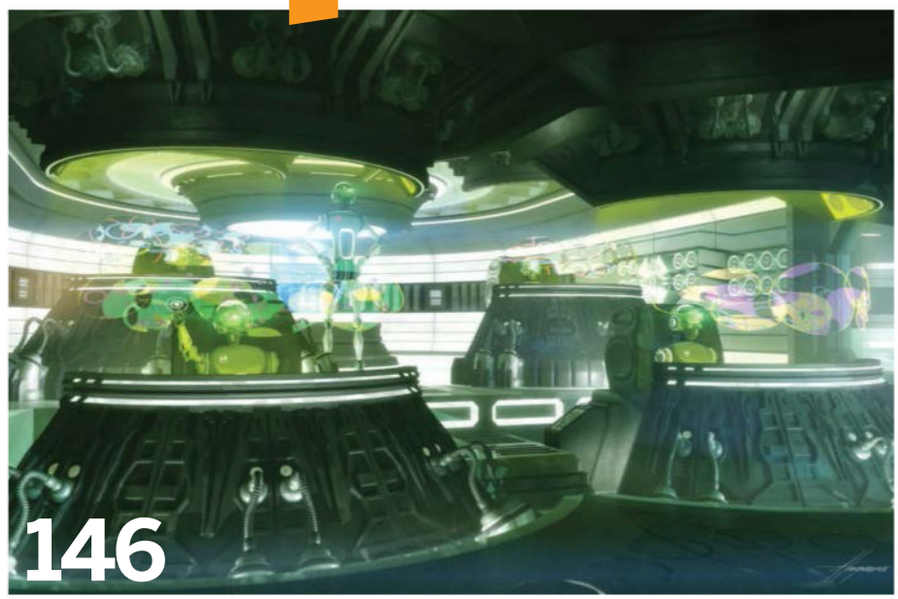
Custom brushes

For this tutorial we didn't just use Photoshop's standard hard and soft brushes, but we also used a brush set from one of our favourite artists, Dan LuVisi, who is also known as 'adonihs'. You can download the set for free from his deviantART gallery: **tinyurl.com/adonihs**. Do read the usage instructions before you use them though. LuVisi is a great artist and this is a fantastic resource, so it's definitely a must to download when working on a matte-painting project like this.



Concept

Get a handle on the premise of your ideas



> “Some digital artists use only photos and then paint over to create their mattes, others use solely 3D software”

138

Sci-fi from concept to render

Bridge of the Automatons 2012

LightWave Photoshop

This futuristic interior has been created using LightWave for the majority, and Photoshop for the post-production work

Science fiction throws up challenges like no other genre, and it's arguably one of the most popular areas of CG in the world thanks to special effects leading the way across blockbuster films and triple-A videogames. "Sci-fi is a huge opportunity to really try something new," says Francesco Corvino, "if the story is set today or in the past, you always keep going back to an established set of references and your designs unavoidably take an 'already seen' look. However, when it comes to sci-fi, if you keep your ideas fresh and you don't lose yourself in the usual vocabulary, then you can really invent a new language."

It's the "vast range of tech, tone and mood," that makes sci-fi appeal to Kurt Papstein too. "The shapes in science fiction can be as out there as you want, bordering on ridiculous. It's a fantastic genre to explore creatures and the natural world on other planets." One of sci-fi's great strengths is that the stakes are naturally high, the frontiers automatically dangerous, the worlds always ripe for exploration. It's a space in which any story – from Gravity to Guardians Of The Galaxy to Edge Of Tomorrow – can play out. And the great thing about working in sci-fi is the high level of creativity it demands at every stage of the pipeline. From the concept artists designing creatures or spaceships, to the modellers making those environments feel both real and fresh, to the postproduction team and the matte painters adding the details that tie everything together: sci-fi, by nature, is filled with possibility.

One of the risks, according to the Doni brothers, Davide and Mario, is actually working too hard to avoid clichés. You have to "find the right balance between something the audience could interpret and something new. A thing we really like to do is to mix sci-fi technology with some kind of ancient technology." Papstein agrees that we'll always be interested in an alien take on humanity, but says that it's "all about mixing the ingredients, looking outside the genre and making something unique."

Ambient occlusion pass of Space Marine Patrol Squad by Davide and Mario Doni


MARK IV
U.S. ARMY

Concept art

Inspiration, research and perseverance are the pillars that great concept art is founded on

There's nowhere a concept artist is more in demand than on a sci-fi (or maybe fantasy) film. Even if the story comes from a source novel where the characters have been well-thought-out and described, even if the script nails a fresh and innovative world just bursting to be brought to life, there is still loads to do. There are creatures, robots, spaceships, humanoid aliens, planets and environments to be designed, not to mention a look and feel of the piece to be conveyed.

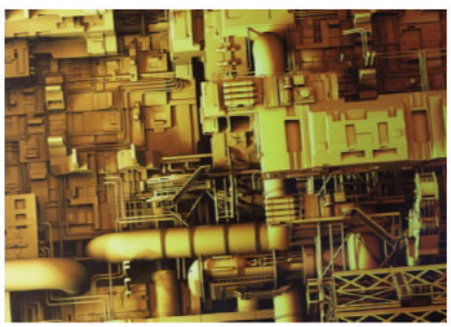
"Usually I put my reference images and books around me and just start drawing or sculpting without constraining myself too much to a certain target look," says Ben Erdt. "Once the design starts to go in an interesting direction, I start to make more specific decisions. However I try not to get too attached to the design as it still should be open for changes. If the design starts to remind me too much of an existing one, I modify it to make it look more distinct. Looking at animals helps me there most of the time." Alex Figini likes to use the natural world too, noting that if you "reference work in the sci-fi genre too heavily, essentially it's been done already and that gets cannibalistic."

Some concept artists will specialise in particular types of work. Papstein, for instance, is much in demand for his creatures. "I'm told 'just do your thing,'" he explains, "so I feel pretty lucky." He finds areas like intricate mechanical modelling much harder, adding that when "talent like Vitaly Bulgarov comes along, it makes it hard for the rest of us. The thing is, when someone like that comes along, it's the new normal."

And Simon Blanc, who specialises in lighting and shading, credits concept artists with being the ones who are making sci-fi really shine. "I see so much amazing art being created," he says, "[for example] incredible universes with a lot of thinking behind them, new types of transportation, new energies, humans integrated in a global space culture... I feel like there's a new way to think about the future, it's not just the classic human empire in space, it's about time we rethink the old militaristic approach to everything!"

Develop a feel for your world

Stefano Tsai explains how he established the look of sci-fi comic BPI: Blue Patrol Industrial



01 Build a solid base

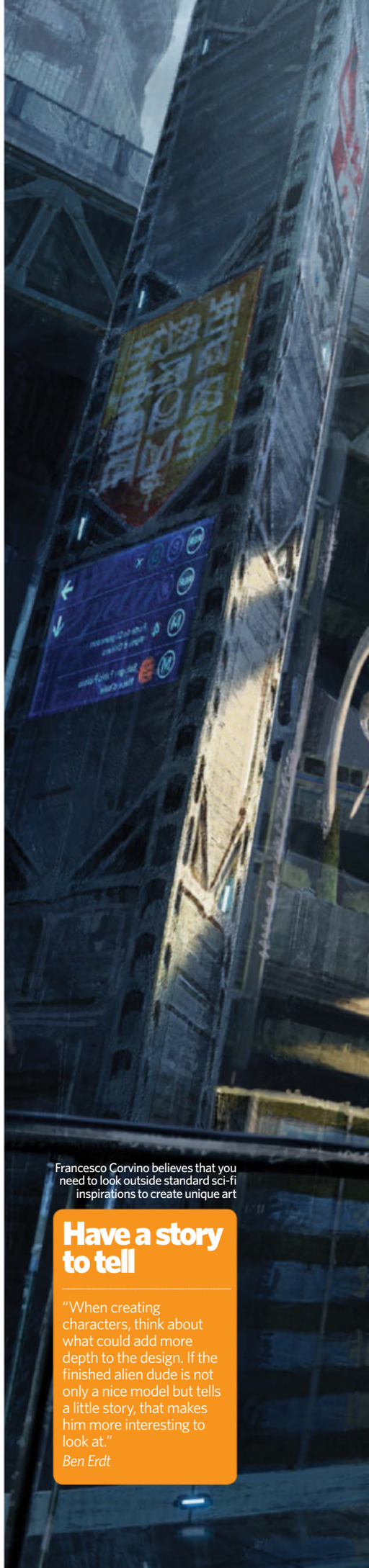
For this comic, 3ds Max, V-Ray and Photoshop has been used. First, build your model on solid bases, because no matter now crazy it is going to be, it has to make sense. If you want to build up an extremely huge structure then – even if we may have superstrong and light materials in the future – you can't give it unrealistic thin pillars, because this won't work.

02 The devil is in the details

Now add good lighting, colours and dirt to bring it to life. No matter how different the shape is to what we are used to, as soon you use a typical lighting method it feels like it exists on Earth. For example, the warm yellow colour will mean the Sun. Maybe you have set your sci-fi world far away from Earth, so the solar system is not the same any more. However, the same lighting settings provide a good human touch right away. This is the same with dirt, which can mean ageing and history between human, props and environments."

03 Add evidence

To give the image more cultural depth you can apply some more human details, and this could be art, signs of human living or graffiti. Here, some graffiti has been added, and this is the final touch of the image to show who is living here and how it's all going, which brings in some more background story information.



Francesco Corvino believes that you need to look outside standard sci-fi inspirations to create unique art

Have a story to tell

"When creating characters, think about what could add more depth to the design. If the finished alien dude is not only a nice model but tells a little story, that makes him more interesting to look at."

Ben Erdt

Think beyond the possible

"It is not always necessary to make things functional. We have the freedom of science on our side, which is really the same as magic if you think about it. Push shapes, question what we are familiar with."
Kurt Papstein

The inner workings of a concept artist

Kurt Papstein reveals how he fits into the pipeline, and the differences between working in film and games

If I'm working on a film project, I typically work directly with the director and visual FX coordinator... When I'm in games, I work with the art director, creative director, marketing, the animators, the game designers, the engineers, the VFX artist, the sound designers... Pretty much the entire team. There are so many connections and technical hurdles in games that you need to be mindful of and to make sure everything lines up. With movies it's just assumed the next group of talent down the line can make whatever you designed work visually. Most of my concepts start with pen and ink, paper and pencil, or sometimes I'll work digitally in something like Photoshop or Sketchbook Pro. Movie directors love to see the concept in the round [and 3D prints of] the design and so on. So I work in ZBrush and spend much of my time early on making rough maquettes, then later doing a posed final sculpt based off the feedback. I will render the model in passes and composite for a clear representation of the final shot."

Arresting armour

Ben Erdt discusses the modelling challenges of convincing armour

I think one of the challenges in modelling for sci-fi projects can be making the armour of sci-fi characters functional. There are often issues like, for instance, an upper body packed in hard plating that won't allow the character to either twist or bend his body, or massive shoulder pads which block arm movement or instead intersect with the head. Also necks embedded in padding, plates, structures and pipes make it very difficult to move the character's head around. These issues can force the artist to invest a lot of time in tweaking and fixing the model. I remember in 2008 I was working on a character that could not move his head down because the helmet was colliding with his chest armour. I had to go back to the high poly, fix the problem and adjust the low-poly model accordingly. I prefer building the armour on top of a rigged version of the character's body as it can make spotting articulation issues easier as you are able to do constant mobility tests."

Sci-fi movie concepts need to be "something unexpected and unexplored, and at the same time applicable to the specific narrative of the movie," says Francesco Corvino

Modelling & texturing

Whether you're building your ideas or someone else's, creatures, characters and worlds all need to seem functional as well as visually appealing

The look development phase can be one of the most interesting stages for an artist as Davide and Mario Doni explain, "It allows us to play with different colours and materials. In this step it's important to try different solutions. Even when you're theoretically sure of the look you want to go for, a little experimenting is always worth it." It's not just the concept artist who needs to explore anatomy textbooks and detailed plans of real machinery, the modelling and texturing artists need to have them to hand too, to ensure that things that look good could also – at least potentially – work.

For Simon Blanc, the "biggest challenge is to make something that doesn't exist look realistic, and not out of place. It's very hard for the human brain to accept something as real if it hasn't seen it before, or if anything looks fake or unnatural. Most of the time in sci-fi we have to work with a lot of metals, designs that don't really exist yet, so it's always a balance between making things look cool and futuristic but still making sense." Working with metals is also a big issue for Ben Erdt, who says that they are "fairly easy to create. There are also some neat automated processes out there to procedurally create surface detail such as edge wear, scratches, and dirt accumulation. However it is still important to look for reference and to do research in order to add these details with a logic instead of fully relying on algorithms."

Once models begin to be built up on a project, then whole levels and environments begin to come together. "Most of the time when making environments, especially in games," notes Jason Godbey, "you want to make as few pieces or sections as possible so you can use them over and over again. If you made every area from scratch it would take forever. With a modular setup it is efficient, but if not executed well the environments can lack character if you just see the same structures again and again."

Most of Godbey's roles have been in games as an environment artist, so set dressing the levels is his goal, using Maya and ZBrush for modelling, and Photoshop and Quixel's DDO for texturing. "Sometimes," he says, "I've been part of teams where several environment artists tackle a single level and you're just responsible for modelling and texturing certain areas. In these roles it's easier to work in a vacuum and just focus on what you need to get done. I've also been part of teams where I am solely responsible for an entire level and I act as the hub between designers, concept artists, lighting artists, and FX artists. In this type of role, good communication between all departments is key."

Modelling challenge

Mario Doni tackled the modelling for this helmet as part of a short course at Escape Studios

01 Swap head for helmet

As part of completing the 3D for Visual Effects course at Escape Studios, the Doni brothers "first shot a footage with a basic dolly move of an actor walking through a corridor with markers on his face. The main goal of the project was to replace the actor's head with the digital helmet. The creation of the model itself has been a challenge!" Mario says that the modelling process all begins with "starting out in ZBrush" where he "sculpted a first version of the helmet from a single hi-resolution dynasphere."

02 Working with Maya and ZBrush

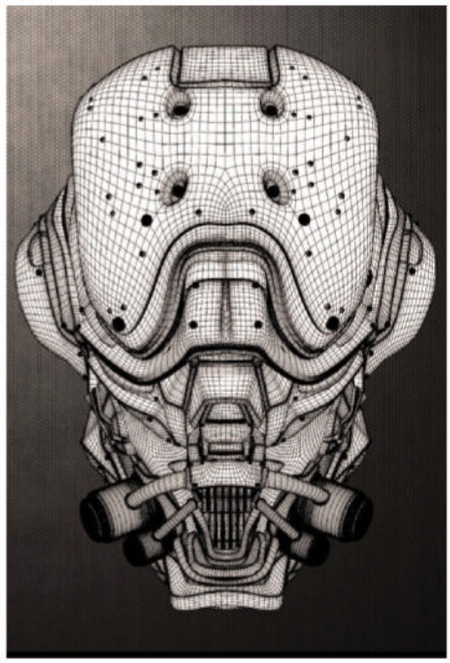
Once he was satisfied with the overall look of the helmet, Mario "did the retopology of every single bit as a separate piece. The low-res retopologised model was imported in Maya for a bit of clean up and UVing and was then brought back to ZBrush. Here the model was then subdivided to reach several millions of polygons for the sculpting, during which he added small details such as bolts, gears, fans and so on."

03 Mapping the results

"To increase the subdivision level of every piece," Mario "did an autogroup (to make every bit its own Polygroup) and then went for a 'group split' to make every piece a single SubTool. In this way it was possible to sculpt one piece a time at the highest reachable subdivision level without slowing the computer too much. The sculpts were saved as Normal and Displacement maps, and applied on the low-poly helmet."

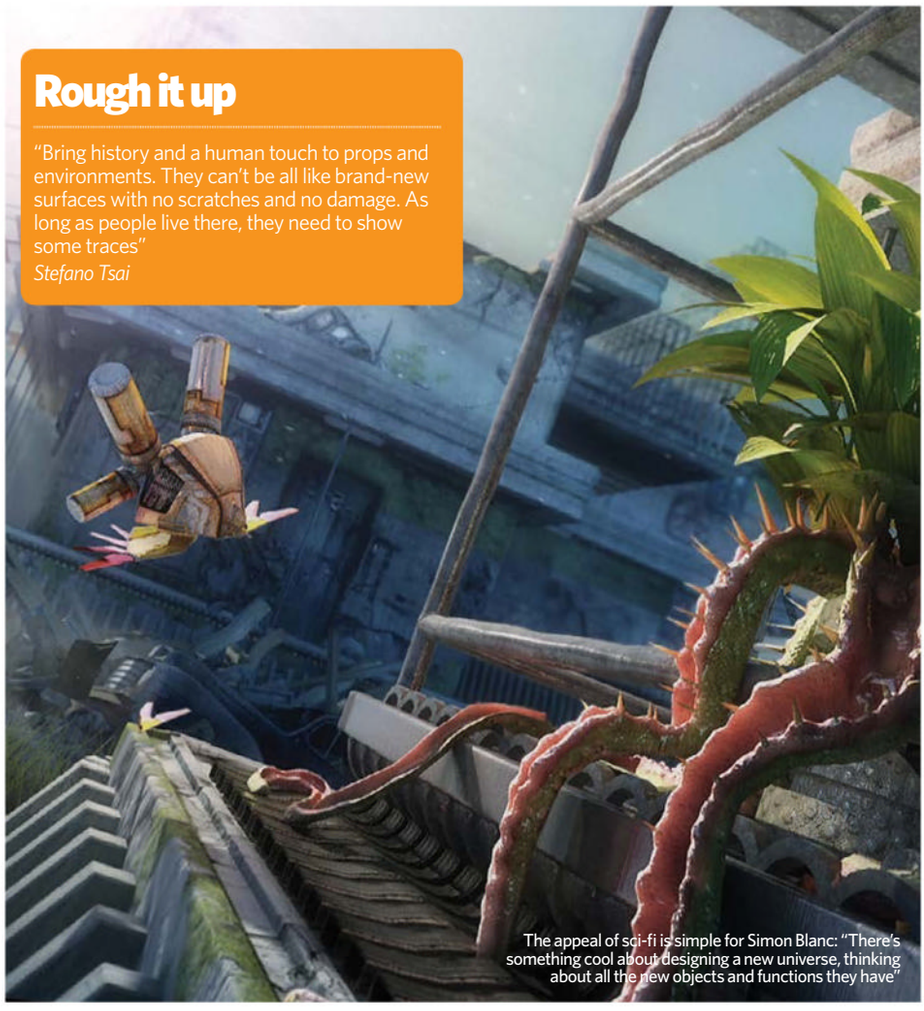
Plan shapes in advance

"Be aware that each shape will contribute dramatically to give a different look to your model; straight/squared lines fit nicely for strong and evil characters while smooth/round lines work better for gentle and good-tempered characters"
Davide and Mario Doni



Rough it up

"Bring history and a human touch to props and environments. They can't be all like brand-new surfaces with no scratches and no damage. As long as people live there, they need to show some traces"
Stefano Tsai



The appeal of sci-fi is simple for Simon Blanc: "There's something cool about designing a new universe, thinking about all the new objects and functions they have"

"I don't have the patience for intricate precision tooling on hard edges and cuts," says Kurt Papstein. "I work with digital clay, and I love big round shapes with wires and hoses"

Environmental lighting

"One thing that helps is having a dynamic composition in the design which allows the assets to be seen at different angles and under different lighting conditions. This helps mask the fact they are used all over the place. Having a couple of really unique assets that are used very sparingly, like a statue or debris, can help break the sense of repetition as well.

"In a lot of my work I try to create areas that imply the environment is bigger than what is seen. This could be just showing the bottom of a staircase or a slightly open door with light streaming through. In the image [shown on the right] I wanted to convey a sense of some comfort in the foreground with the bright warm light and create a sense of unease in the background with the red key light and cool ambient light. The sense of unease is heightened by the fact that the source for the red light is out of sight. Not knowing what is around the corner, but yet knowing something is probably there, builds tension in the scene."

Lighting, rendering & postproduction

More than just the final spit and polish, lighting and rendering can often be key in determining tone and mood of the piece

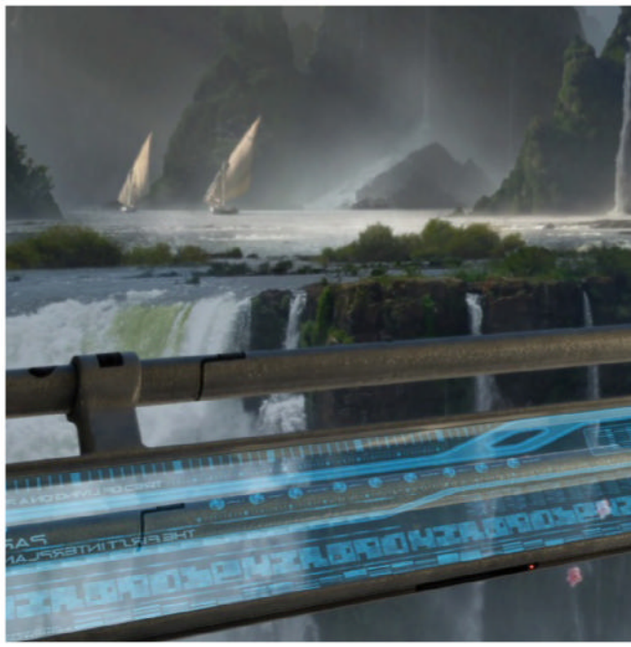
While Blade Runner is still the go-to film for neo-noir sci-fi inspiration, there are plenty of other moods and styles that can comfortably exist in the science-fiction universe, as Stefano Tsai found out when he started work on the comic BPI. It was a big challenge because it was a cartoon 3D rendering project. Tsai used V-Ray as his rendering engine, and "The most difficult part was to make images interesting. It is so easy to make boring Toon Shader images, [but] you lose so much details on surfaces; all subtle lighting and shader details are so easy to kill. In the early stage, I tried to push the look of a pure line-drawing comic. It looks cool in the beginning, but it changed course very quickly."

To make his comic book style scenes look interesting, Tsai tried various different options, but no matter how much he tried he felt that something was missing. He continues: "I realised that I must be missing one fundamental element in my scene and that was 3D itself... I had to make it more 3D looking. The 3D look is actually ambient occlusion (AO), so I started adding one more layer with AO." This made Tsai realise how hard minimalism is. "It is so easy when you can use shaders, good materials, realistic lighting and good rendering – especially when you need those to make your sci-fi project more believable," Tsai adds.

And believability is the core issue in all sci-fi. Things can be inventive and different and dramatic, but the audience has to buy into it, or the story doesn't work and the world falls flat. Corvino has seen more interest in visualising sci-fi in a "more grounded and realistic way" recently. "Designing with this intent makes everything feel more authentic and believable," Corvino continues to explain to us. "With sci-fi you really need to find an intelligent balance. Sometimes you will be tempted to push things to the limit, showing designs that have never seen before, and as I said, I think that sci-fi is all about exploring uncharted territories. However you always have to try and be careful with the freedom the genre gives you. It's easy to slip into crazy designs that quickly become overwhelming and nonsensical."

And for Corvino, this is even more of an issue when he's stepping up to the plate as a matte painter. "When you're creating a matte painting you're not necessarily designing," he explains. "More often than not a matte painter will receive a concept from somebody else and he's requested to make it look photoreal." Because, when sci-fi is done well, Figini says it can "make the impossible seem possible. It's a window into a future or another world."

From concept to render, sci-fi demands inspiration, vision, and dedication. But it doesn't require all the answers. For Papstein, this is what makes sci-fi so compelling, that "it's a genre that gets us to ask the big questions and look up and wonder. So take advantage of that and make your concept tell a story that invites the viewer to wonder and fill in the blanks a little..."



Plan your lighting

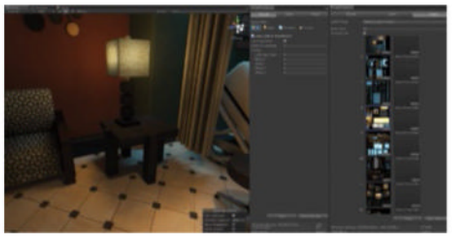
"Most of the time after modelling your first instinct will be to go to texturing: try to avoid that. Force yourself to light the scene with a mid-grey material first, so you won't end up tweaking the textures too much since you're sure about the lighting"
Davide and Mario Doni

Lighting for Unity

The lighting was a real challenge for Jason Godbey when he working on a project with real-time scenes running with the Unity 3D game engine

01 Don't tile...
At the time the lighting capabilities in the engine were limited and I wasn't able to get the look I wanted. So to get around this I used V-Ray to bake out lightmaps for the scenes. I had to make a second UV set for all assets or groups of assets and light them inside 3ds Max with V-Ray. I made sure the UVs were within the 0-1 space since the the lightmaps don't tile.

02 ...bake instead
Once the lighting was the way I liked it I baked the lighting to the second UV set using the VrayTotalRawLighting render element and saved them out as an OpenEXR format.



03 Draw a lightmap
I brought them into Unity, assigned the object a number in the Lightmap Index under the Object tab from the Lightmapping window, and then in the Maps tab, I plugged the lightmap of the object into the assigned number slot. It took a little more work to go this route, but to me the results were worth it.

You think of a concept artist working at the beginning of a project, but Francesco Corvino says he is often asked to create images when the movie has been shot

"Each artist is unique and has his own way of doing things," says Francesco Corvino. So his advice is to "understand your strengths" as this is "the best way to get your talent flowing"

Render & render again

"Don't waste your time tweaking tiny numbers inside the slots of your shaders. Keep in mind that using render passes you will be able to precisely tweak the look of your assets after the main render"
Davide and Mario Doni

Artist Info

Sean Hargreaves
Personal portfolio site **www.seanhargreavesdesigns.blogspot.com**
Country **USA**
Software used **LightWave, Photoshop**
Sean works in the film industry designing how films, commercials and videos will look. He frequently uses LightWave in his work to clearly represent his concepts

Design a sci-fi interior

Bridge of the Automatons 2012

LightWave Photoshop

This futuristic interior has been created using LightWave for the majority, and Photoshop for the post-production work

Design an interior

Learn how to

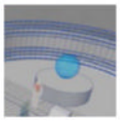
- ☑ Design pre-layout
- ☑ Establish a point of view for the presentation
- ☑ Master the basics of subdivision modelling
- ☑ Define the importance of detailed design as opposed to clean, and vice versa
- ☑ Finish with post-production using Photoshop

Concept

I always try to keep a strong shape theme throughout. I emphasise and change detailing where needed in order to guide the eye through the interior. Lighting is very important and can completely change the look of a design just by a simple light choice, colour, type, or placement, so it's very important to always think about the lighting when building the model. It's also very important not to cram an interior with so much stuff that there is nowhere to move or see most of the interior, as the viewer needs to understand what they are looking at. It's a careful balance that you always need to keep in mind in your work; the balance between objects, details and lighting.

This tutorial will show the stages – from the first steps of designing to the finished rendering – of creating a spacecraft cockpit interior manned by robots. It will cover thoughts on how to layout the design and what to emphasise in terms of detail, lighting and surfacing, as well as how to choose the best angle to render from. You can find all the tutorial files that you will need at filesilo.co.uk/bks-890.

Using LightWave software I will show how to easily create some of the parts that will make up the final design, as well as talk about the emphasis on the balance between detail and simplicity. The image design, construction and final rendering will be completed as if for a static concept design. The design will be finished within LightWave, with post-production completed using Photoshop with no pre-sketches involved.

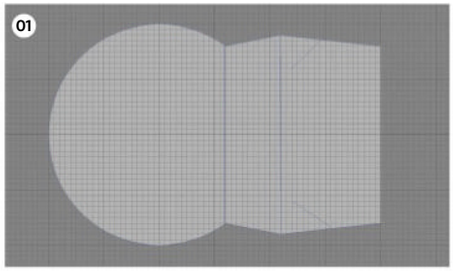


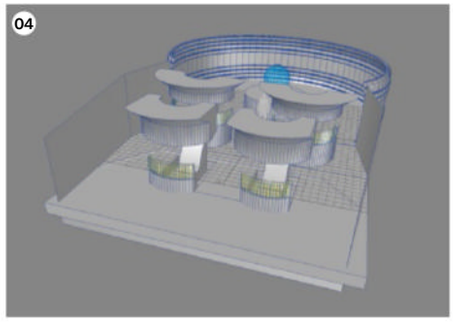
Make a 3D design template

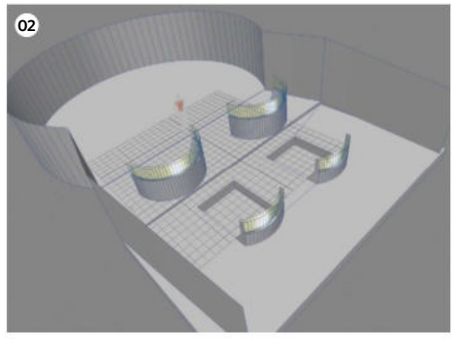
Concentrate on the basic shapes and their placement

01 The plan view

This is the template where we'll make our overall rough shapes within the interior. These first four steps will offer an overall guide – or template – for the final design. Have a clear idea of what your interior is to contain. I know that I want two areas: the pilot consoles.





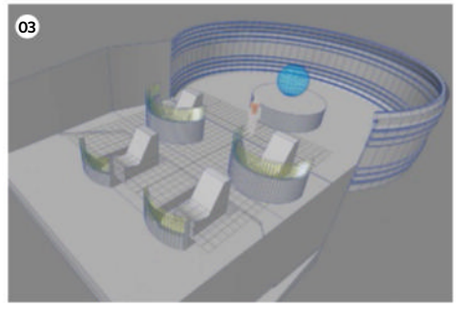


02 Include pilot consoles

I start to add the consoles. Remember: these are templates (or guides) and are not the final designs, although the shapes may be similar. I am just roughing them in, so as to make sure that the shapes and sizes work. It is a quick and simple way to inform yourself whether or not your overall design shape is working for the final rendered angle.

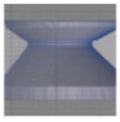
03 Add seats and rear navigation

Here I'm adding the rough seat shapes as well as the rear navigation showing the digital globe and some wall panelling. I want the seats to be rather bulky with a high back, plus I want to have some organic shapes on them, so larger is better. As most of the detail will be at the front, the rear will be designed in more of a minimalist look. All these details have to be considered to decide on the more important objects.



04 Place more objects

Here you can see another overview of the interior's major scene elements. As you can see, the consoles, seats and overhead screens take up a large part of this interior. I know that I want to add overhead consoles to fill out the interior, as well as have four dedicated navigation or work stations that are identical, so I'm building these shapes slightly oversized as a worst-case scenario, knowing that they will probably get smaller as I finalise the design. In building the upper and lower consoles I am using the Lathe tool, which I will explain in more detail in later steps.

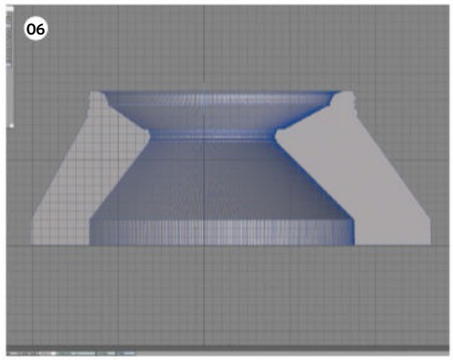


Model the elements

Use the template to design and build objects

05 Create the console

Using the Pen tool in LightWave I place points to make the section of the console – this shape represents a slice through the console. I move the points around until I get the desired shape, keeping in mind what it will look like when I introduce the next step.

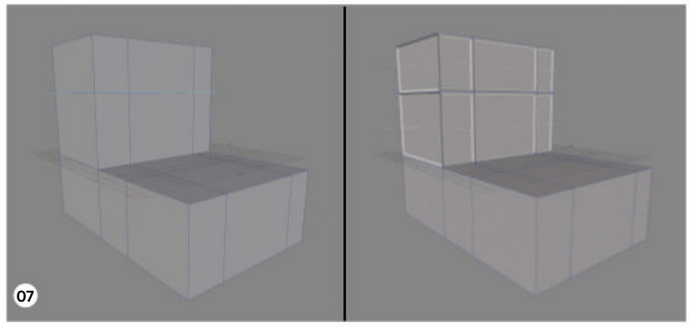


06 Lathe the section

Knowing I want to partially lathe it, I place the section a certain distance from my central lathe point. I then choose the Lathe button, place my cursor on the centre point and pull down slightly to lathe the section into a three-dimensional shape. By hitting the N key I pull up the Numerical window that enables me to type in the degrees to which I want the section lathed. In this case I find through experimentation that 120 degrees is what looks best. Of course you can make your own assessment for your personal piece.

07 Shape the seat

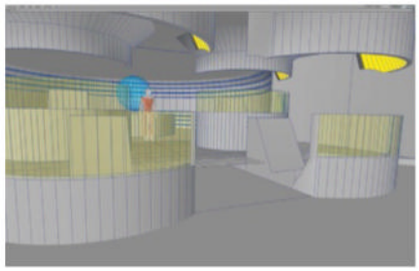
I will make this seat knowing I will move into subdivision (sub-d) modelling at a certain point, as I want the seat to be organic. Modelling between regular and sub-d can be tricky, and I keep an eye on both my polygon count and sections, or edges. I start with a box and, using the Knife tool, cut in my sections, as well as using the Extrude tool to pull out the base. I then begin on the upper seat, detailing by choosing multiple polygons and using the Bevel tool. I then once again choose the same polygons and push them back, bevel, choose again and pull them forward, again keeping in mind what it will look like in sub-d.



> “Modelling between regular and sub-d can be tricky”

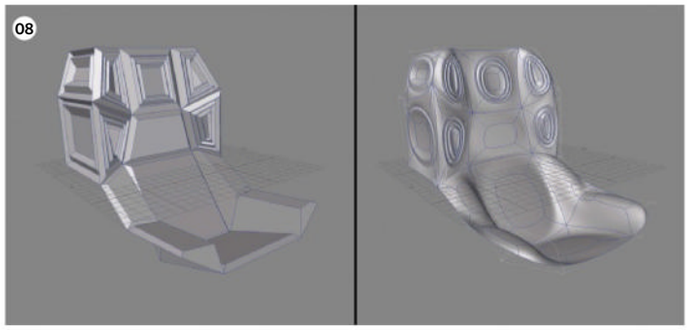
Final rough object placement

Here, as you can see, all the rough model shapes are in the interior. I know the angle I want to render from so I place my viewpoint from that angle to check the placement and sizes of the consoles, screens and chairs. I have added a six-foot human for scale – always try to have a human in there during your modelling stage to check for scale. A robot I have pre-made for the final design will replace this human. At this point I can see I have to make size adjustments to the main objects, which I will do in the final build.



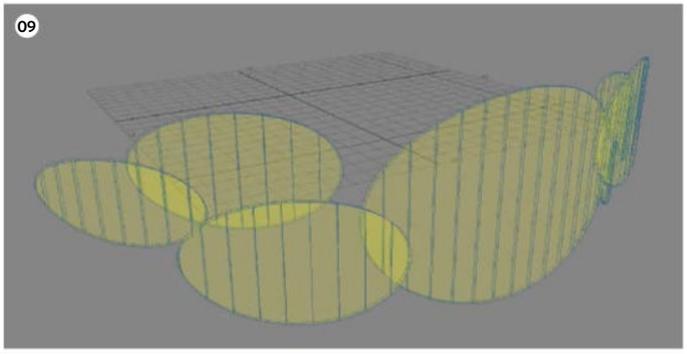
08 Regular and sub-d modelling

I continue to model the seat, detailing out the top half and picking points to move corners and polygons around. Once I have the basic shape of the seat I hit Tab and the model turns into a subdivision model that's much more organic. When subdivision modelling, the greater the polygon count the tighter your shapes will be. Depending on how organic you want your model you must always keep an eye on your polygon count as well as where your edges lie. Even at this stage of the modelling process you can still direct the mood of your scene.



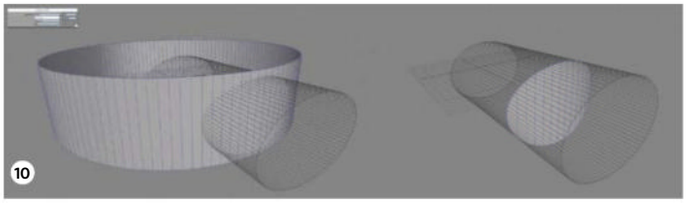
09 Make the elliptical screens

I make a tall ring following the size of the top of my console, then a horizontal elliptical cylinder on another layer. LightWave uses layers where every model can be made on a separate layer that can itself be turned on or off. I make sure that the tall ring layer is active and the horizontal cylinder is seen and then I hit the Boolean button, which brings up a window. In that window I choose the Intersect button and hit OK. The result is one of seven screens that I will make in the same way, in different positions. Boolean modelling is a technique I use a lot – but not if I'm going to work in subdivision modelling as well, as the mesh gets compromised and your sub-d surface can get severe anomalies.



10 Set the console screens

Here I make seven screens, rotate them and then place them into the positions where I want them. I colour and make them semi-transparent just to get a rough read of what they might look like in terms of the overlays.

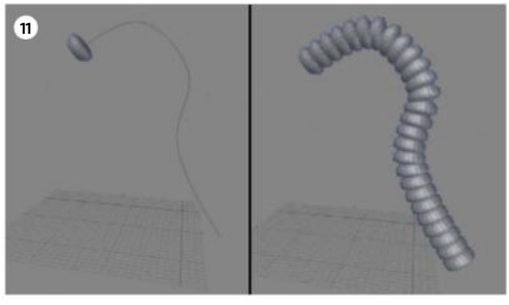


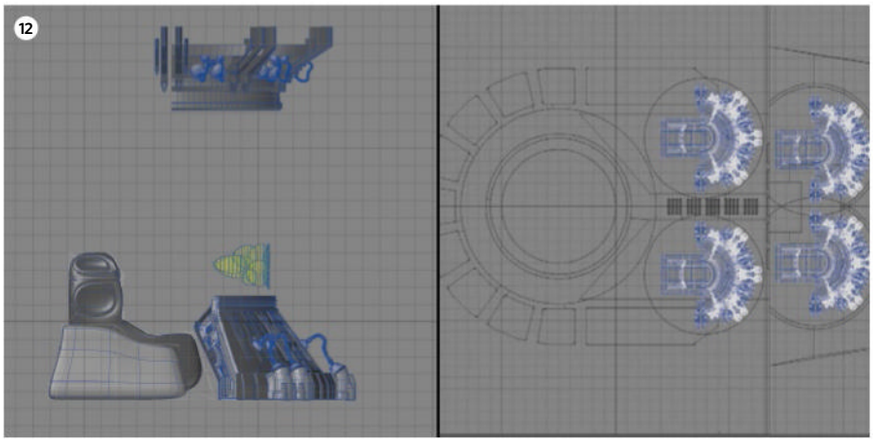
Model and place elements

Detail out the consoles and more

11 Craft the articulated cables

Electrical cables are always good to make an interior of any control area believable. To make the cables that will go around the base of each upper and lower console I add a single modified disc shape on one layer, then on the next layer, using the Spline tool, I make my path. This is the path that the cable and the shape will follow upon duplication. Next I go to Multiply>Duplicate>Rail Clone, and this pulls up the Rail Clone window. I choose Uniform Lengths and type in 26 to determine the amount of duplications I will have on the shape I've made. To finish the step I hit OK and continue adding simple box shapes to the console exterior.





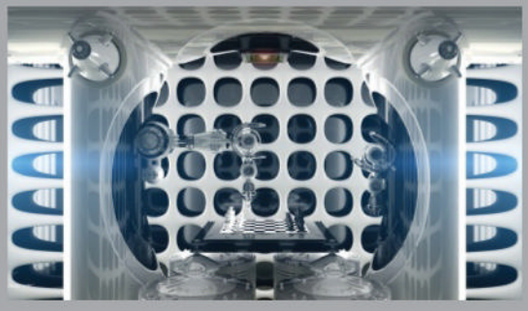
12 Duplicate more sections

I choose the console and, using the Mirror tool, I duplicate it vertically to add the overhead screen. I then manipulate its proportions and add some small details so aesthetically it isn't an exact duplicate. Next I choose the upper and lower consoles, chair and screen, and then copy and paste to another layer. I place the two console control areas relative to my rough two-step floor. Using the Mirror tool again, but this time in the Top view, I duplicate along the X-axis. I now have my four control areas complete.

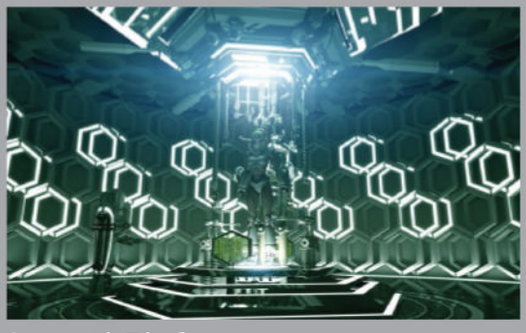
Artist Showcase

Sean Hargreaves
As well as a production and concept designer in the film industry, Sean is also an illustrator, using LightWave and Photoshop in his artworks.

Cren
2010, LightWave
Sean wanted to create an epic future cityscape and spent a lot of time making parts. The result was a heavy polygon count and a long render time, but the final image was well worth it!



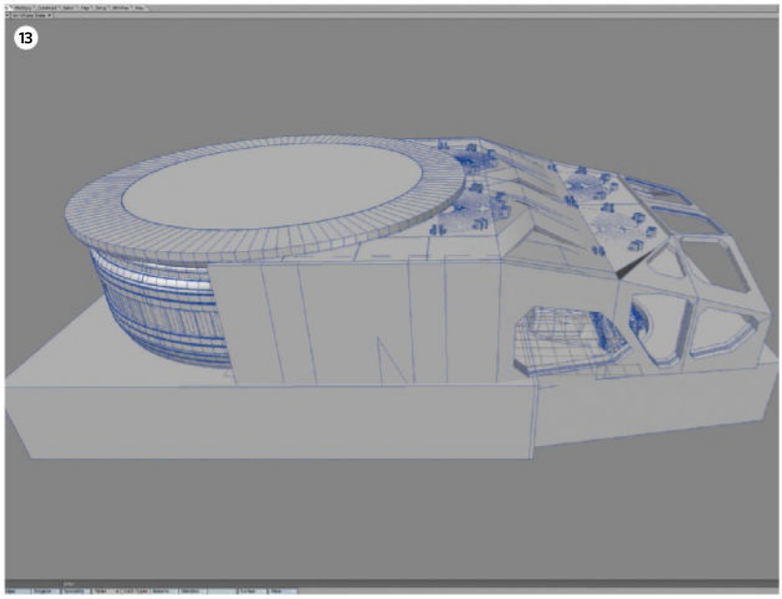
2010, LightWave, Photoshop
Sean has always liked labs, clean rooms and complex robots doing simple tasks. In this image, he's combined all of them.



Concentric Diaphum
2010, LightWave, Photoshop
Sometimes Sean will get an image in his head without any explanation. For him, the most compelling images are those that he doesn't know what they are. "Mystery is good!" he says.

13 Gain overall views

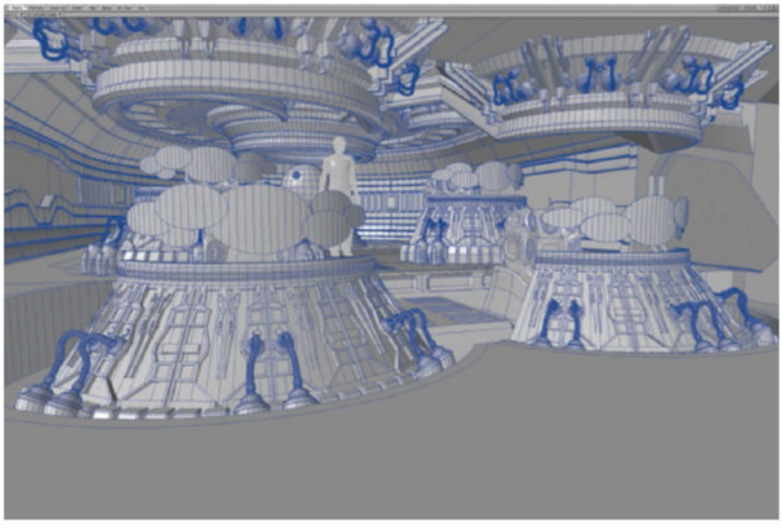
In these two steps I am checking the overall views, and you can see the shape of the exterior and interior of the design. In this step the exterior is rough as it's not to be seen in the render, but you can see the forward section with its window openings that are critical in terms of reflections and shadows when using outside lighting. It's very important to model the entire 360 degrees of an interior, especially if you have reflective surfaces and want accurate lighting and shadows.

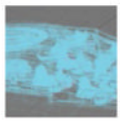


The finished interior model

Here you can see the overall look and positioning of items in the interior. It's at this point I select each layer that contains the individual components and label them for surfacing. I have concentrated on modelling the more prominent parts in the foreground; the rear navigation area is all modelled using the same tools and procedures.

> "It's very important to model the entire 360 degrees of an interior, especially if you have reflective surfaces and want accurate lighting and shadows"





Lighting and rendering

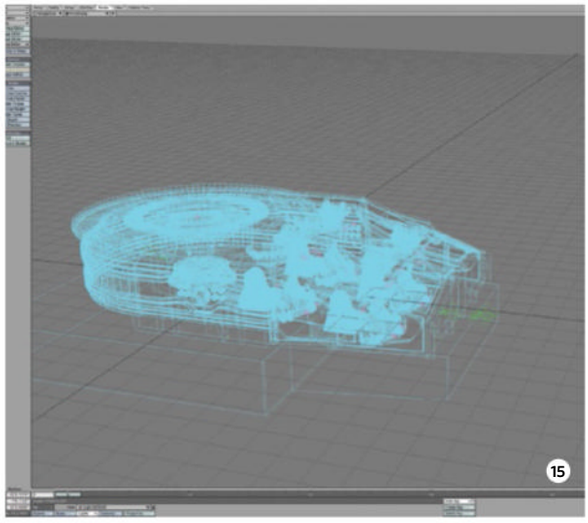
Now we get to make the scene look realistic…

14 Place the interior lights

Now in Layout – in LightWave, this is where you set up your scene lights and camera as well as render – I am placing the lights. I have also imported my pre-made robots and placed them. Doing a series of very rough render passes, I experiment with what works best for the look I want, slowly playing with the light levels and colours (I tend to like cool lighting as opposed to warm). I decide that point lights will work perfectly for this rendering. I also turn up the Luminosity to around 200% on my luminous polygons in the navigation area. These luminous polygons aren't actual lights (they don't produce shadows), but using radiosity they can appear quite nice, very similar to fluorescent lighting.

15 Include the exterior light

Here you can see the single exterior light (on the right and activated in the image). I started with a distant light, but the harsh shadows weren't working for me, so I switch to a spotlight for better control.



16 The raw render

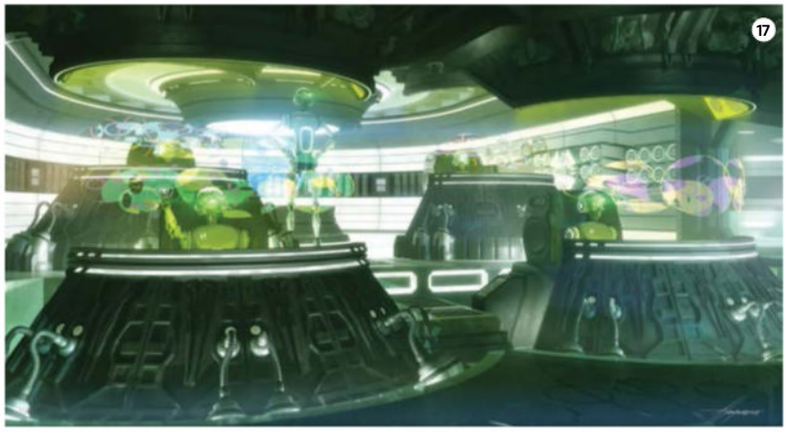
Just prior to the render I go into my Camera Properties window and set the size of the final image as well as the depth of field; in this case I set my focus on the standing robot and the Depth of Field F-stop is set to 4.0. Everything in reality has depth of field where the foreground and the background are a little or a lot out of focus, depending on your settings. I always use depth of field, as it takes a portion of the synthetic feel out of your final image and makes it that much more real. Now I have my final raw render, I can start my post work. Using Photoshop I will add bloom to the lighting, apply lens flares and do an overall colour grade to the image, in this case a yellow-green tone.

Post-production techniques

What we see with our naked eyes in reality and photography has anomalies and is more organic. Also, a lot of concept artists now use a 3D model as a rough guide, which they light and render and then do paint-overs on. Careful study of your surroundings and photography will inform you of what is real. Try to equal the world around you, the real world!

17 Complete the final render

I can now finish up my post-render Photoshop work. I add some grit, atmosphere, bloom the source light, add flares and alter the overall colour of the image. The final look is totally subjective in any piece of art or design work. With my image I'm going for an atmospheric feel, with an almost dreamy, distant quality that is broody but believable.



Master pro matte painting

Photoshop

Steampunk Factory 2011

In this tutorial we'll show you how to combine photos and 3D renders for the best results

Creating photoreal fantasy environments can be fun, but the process involves many a technique that you'll need to master.

Some digital artists use only photos and then paint over to create their mattes, whereas others use solely 3D software. Both methods have their pros and cons. With a purely 2D approach, using just photos can be tricky; factors to consider when pulling imagery together are perspective, lighting and image resolution. On the other hand, simply using 3D renders makes it more difficult to get photoreal results straight out of the box when rendered.

In this tutorial we'll show you how to combine photos and 3D renders for the best results. We'll also be making use of Photoshop's key filters and default brushes, as well as offering some insight into how to enhance a dull 3D render to give it more life. A basic knowledge of any 3D software will help you to pick up this process quicker, though we have three render passes included online for the 3D uninitiated to play with. Find the tutorial files at **filesilo.co.uk/bks-890**.

We encourage you to develop your own concept and apply the techniques in this masterclass so you end up with an image you can truly call your own. This guide isn't about magical tricks and one-click solutions. Rather, we're giving you the foundations so you can make render passes work for you, use photos effectively and push your compositing skills to the next level.

Artist Info

Jeffery M. De Guzman

Personal portfolio site **http://theartofjeffmd.com**

Country **Philippines**

Software used **Photoshop, Maya, 3ds Max**

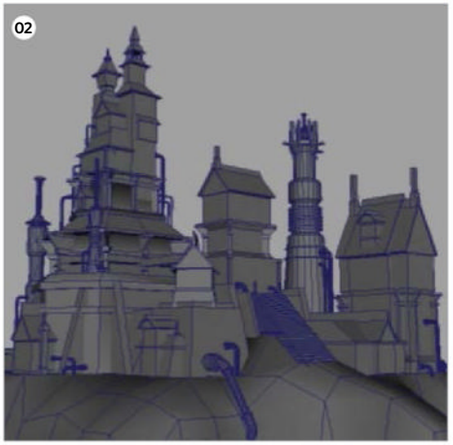
Jeffery works for Lucasart in Singapore, and has worked on films such as *Iron Man 2* and *The Avengers: Age of Ultron.*

Create your scene

Kick off the design work

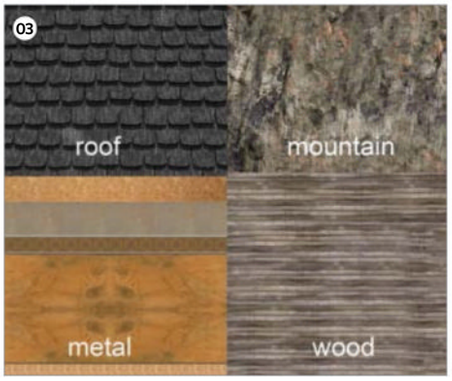
01 Concept It's always best to kick off any project with a rough concept. This will serve as your guide and help you to make artistic decisions faster later on. There's no need to create an exceptionally well-drawn or painted concept – all you need are good suggestions of shapes, lighting and atmosphere. You can also use photo references, mixing and matching them until you have a solid base to work from.

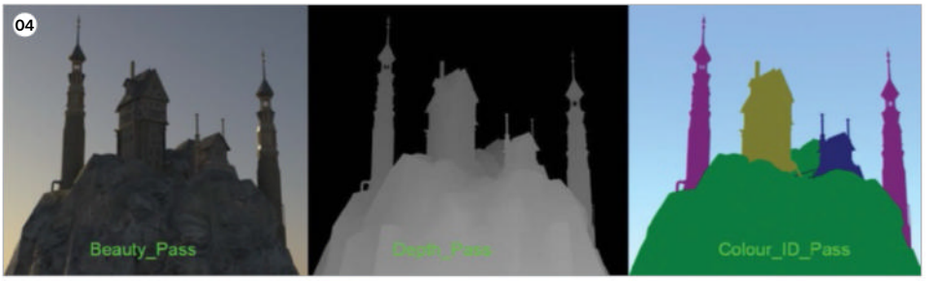
02 Block out in 3D Just like painting or sketching, first block out the general shapes and sizes, and map the layout. This will help to re-create your 2D concept faster. The advantage of blocking things out in 3D is that you can quickly amend your concept to help refine the final composition. For instance, you can experiment with aspects like image views, angles and lighting.



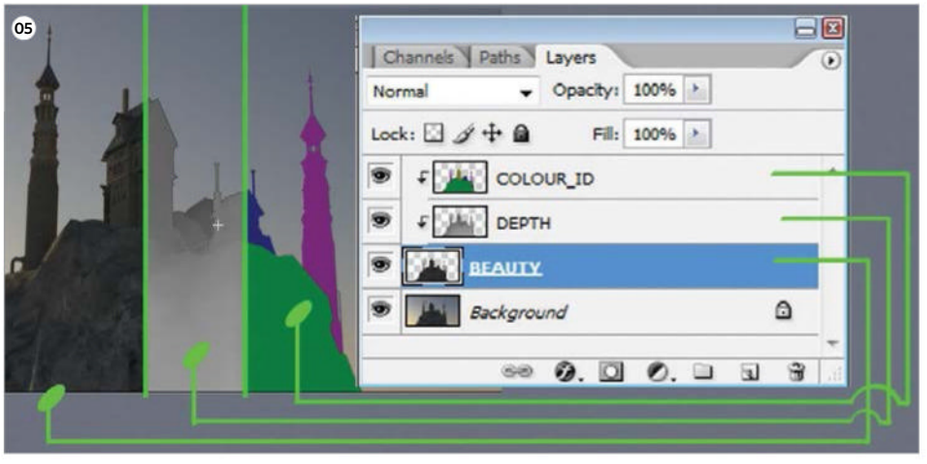
> Just like painting or sketching, first block out the general shapes and sizes, and map the layout

03 Make textures We only need low-detail textures for now, like those shown in the screenshot – just the basics to help us determine the shape, the feel and the perspective. Later, we will enhance textures with photo stock in our Photoshop composite so don't dwell too long on this step. Throw in your textures and create your own texture map in Photoshop.



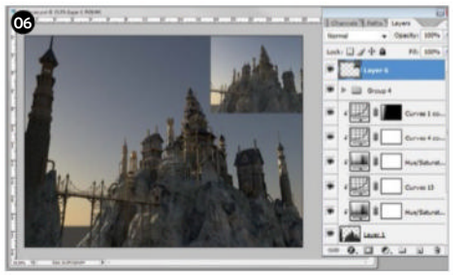


04 Render passes A beauty pass, colour ID pass (optional) and depth pass are all we need, as we'll be making the majority of elements within Photoshop. Although having more passes gives us greater control over renders, we'll keep things simple and use photos to enhance what the renders lack. Make sure all your renders are the same size with alphas.



05 Set up render passes In Photoshop, open all three render passes. Drag the depth pass over the beauty pass, while holding Cmd/Ctrl+Shift so they will perfectly line up on top of your main image. Repeat with the colour ID pass and drag it over to the beauty pass window. Rename this window to your project file name PSD. Now turn off visibility layers of the depth and colour ID passes for the moment.

06 Beauty pass In the Channels tab, locate the alpha layer and Cmd/Ctrl-click the layer to create an instant selection. Go back to the Layers palette, hold Cmd/Ctrl+Shift+I to invert the selection and press Cmd/Ctrl+J to duplicate or extract the selected area to another layer. Apply a Color Balance adjustment layer on top with a clipping mask, subtly pushing Highlights toward yellow and Shadows toward blue; this will add more colour contrast to the flat renders. Experiment with other adjustment layers and tweak colours as you see fit.



08 Colour ID We said this pass was optional, but it removes the burden of making the same selections. Since the renders assigned each piece in different colours as desired, it is easy for us to select a part of the image without tediously following the shape. All we need to do is use the Magic Wand tool to get the area we want.

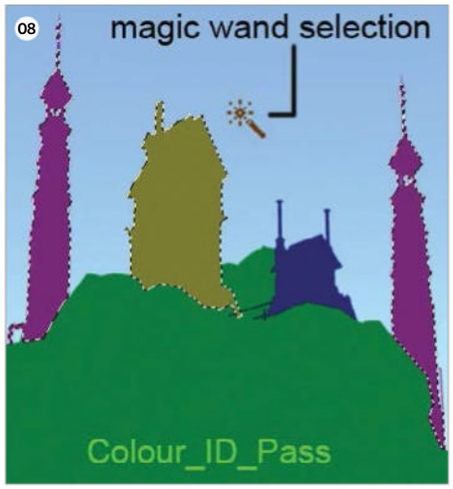
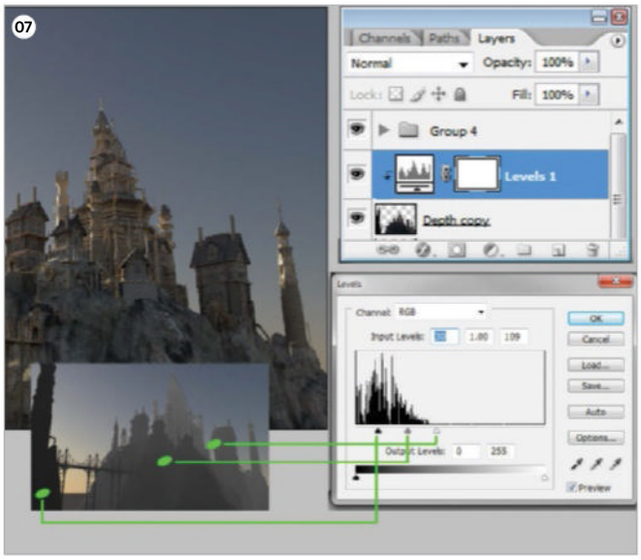


Image Library

Building your own image library is a must for every matte painter. Whether it's a shot of a simple lamppost, foliage, water, or more extreme landscapes, they will all come in handy for some project sooner or later. Try to carry a camera with you at all times so that you can easily take a snapshot of things for current projects as well as future reference. It's often stressed how important it is to see things from a camera's perspective. By doing these simple steps, you will learn a lot of things through frequent practice and be able to translate them into your matte paintings.

07 Depth map Turn the visibility of the depth layer back on. In the extracted beauty pass layer, press Cmd/Ctrl+Shift, click the layer, Cmd/Ctrl+Shift+I to invert selection then delete to remove the background image. Change the blend mode from Normal to Lighten and drop Opacity to 20%. Add a Levels adjustment layer above the depth map. As you play around with the sliders, you will see how the depth and haze of each element is affected.

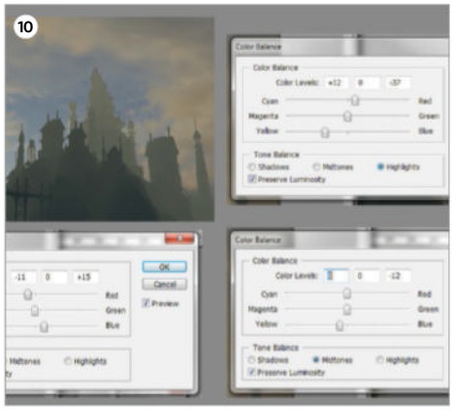


Adjustment Layers

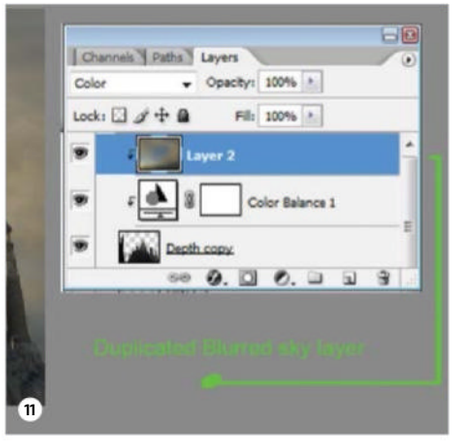
It's a good habit to use adjustment layers to make changes to your images. These give you more control when tweaking the colour values, brightness and levels without actually making changes to the original image. With this approach, you can always go back to any adjustment layer and fine-tune things too.

09 Add a sky The sky is one of the most important parts of this image, as it will determine the overall colour value, brightness and general mood. Make sure that you choose a sky that will work with the image's composition rather than overpower it. Also ensure that you get the correct lighting direction and time of day to match your beauty pass render. Insert the sky below the beauty pass layer.

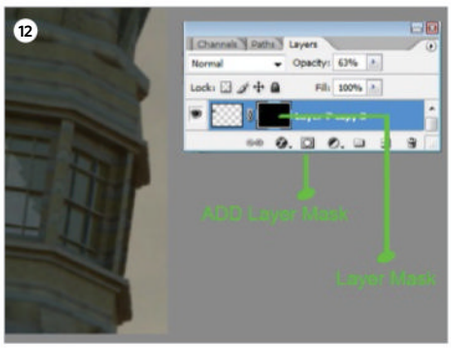
10 Grade the depth pass Now add a Color Balance adjustment layer with a clipping mask to the depth pass layer. Adjust the Shadows values for Blue and Cyan to the colour of the blue sky, but more intense. Change the Highlights values for Yellow and Red to the same values as the bright points of the clouds, but slightly more subtle in intensity. For the Midtones, just add hints of yellow.



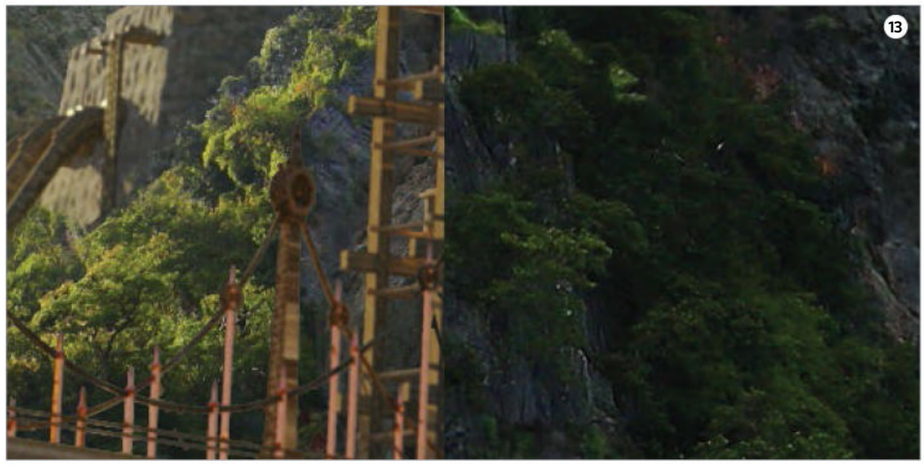
11 Colour grade the sky Duplicate the sky layer and drag it on top of the depth pass layer. Press Cmd/Ctrl+Shift+G to create a clipping mask. Go to Filter>Blur>Gaussian Blur and apply an 80px value. Change the blending mode to Soft Light, Overlay or Color so that the colouring of the sky will also influence your depth pass.



12 Time to reflect For the window reflection, using any part of the sky image, select a portion with the Marquee tool and duplicate. Reduce the layer Opacity to 60-65%. Add a layer mask and fill with black then paint inside the layer mask with a white brush to reveal the image. You may also need to fine-tune the reflection by adjusting its contrast and saturation to get that reflected quality using Hue/Saturation and Curves layers.



13 Rock textures Source some rock textures and place over the mountain render pass (you can use the beauty and colour ID passes to help isolate the selection of the mountain with the Magic Wand tool, then use the selection as a mask). Scale down the texture, twist, skew or rotate to match the perspective of the mountain. Lower its black values using Curves or Levels to match the depth/haze already in place.

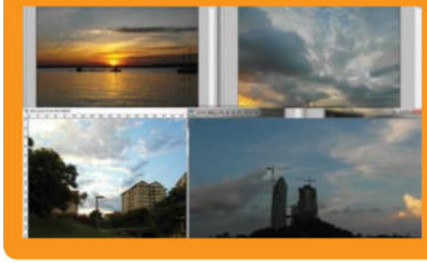


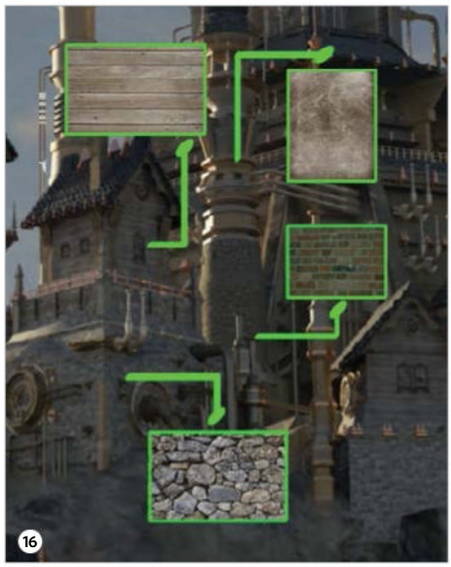
14 Going green Using photos, populate your environment with trees and plants, colour correcting them to match the overall scene. It would be best to have the same lighting in the original photos as much as possible, but if not we can simply relight them.

15 Relight the scenery Relighting works well for an image that is flatly lit or has no direct key light. Duplicate the image, press Cmd/Ctrl+B to alter the Color Balance and use Curves (Cmd/Ctrl+M) to adjust the brightness of the tree and rock imagery based on the colour of the sky's key light. Add a layer mask and fill it with black. Now, with a white standard brush, reveal the lit area gradually.

Image Library

It's recommended that you understand the basics of photography when creating this kind of artwork. It can easily be spotted if a matte painting looks more like a photomontage. We must always try to 'see' the composition from the camera's point of view. There are a lot of things that photograph differently under different conditions. Take a lot of photos and understand the characteristics of an image when shot at various times. This is a key factor in our final matte painting looking the real deal.

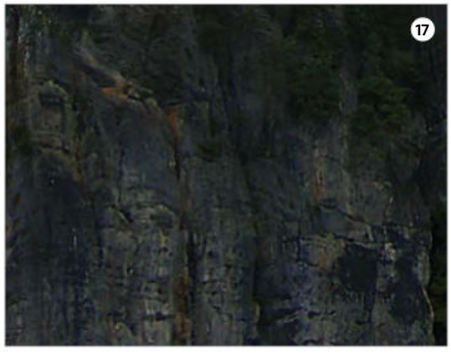




16 More textures To quickly give renders a photoreal look, you need to comp photos into your image. Since the renders weren't edited much, we need to support them with proper texture overlays to give a more realistic feel to every material. Cut and paste photos of closely matched images and then scale to fit the original rendered image, setting the blend mode to Soft Light. Lower Opacity to 20% or until you feel blending is seamless.

> "Since the renders weren't edited much, we need to support them with proper texture overlays for a more realistic feel"

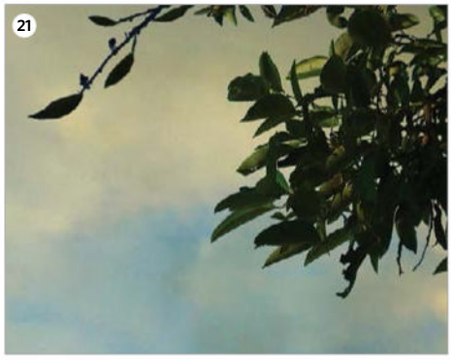
17 Mountain makeover This is where we give the mountain some character. Since ours has no real shape, we need to add some cliff edges, cracks and strata effects. Don't add loads of images to every part; you just need them here and there to add interesting focal points.



18 Enhance details The tiny details count, even though sometimes we might think they are not necessary. In fact, these are the parts that send a signal to the viewer's brain and subtle hints to their eyes that they are looking at a real-life image as opposed to a painting. Roof gutters, door jambs, window frames, smoke and reflections are just some of the things you should be paying attention to here. Simply add photos of these elements and blend as in previous steps.

19 Light blooms Once a shiny object is hit by light, a subtle glow is captured in a photograph. These bright spots need to be painted in and/or enhanced on existing stock. Add a new layer on top of all the layers we have set to Screen. Get a standard soft-edged brush and set Flow to 20%. Colour pick the brightest highlight colour in the image then lightly begin to work in these blooms.

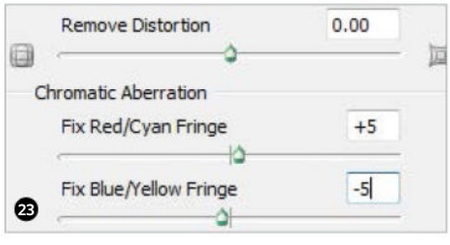
20 Blur edges Once you're happy with the image, save, flatten it then save as a new copy (just in case you want to go back to previous work and make adjustments). Next select the Blur tool and lower the Flow to 10%. Lightly blur the edges of elements – all those sharp edges of cutout trees, roofs, cliffs, etc. Overly sharp edges are one of the biggest giveaways that images have been comped together when it comes to matte-painted artwork.

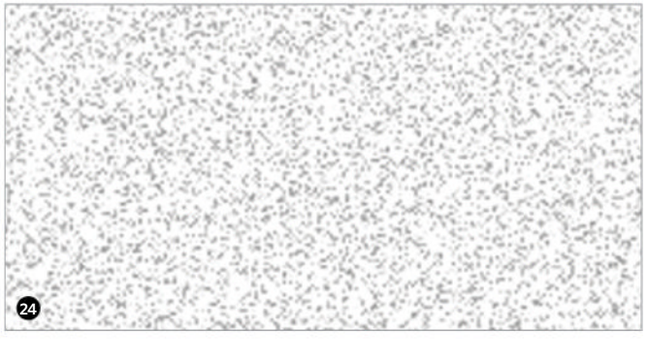


21 Well and truly framed Adding framing elements, such as branches or hints of architecture, can really help pull the viewer into the scene. They can also add to the composition, making viewers focus more on the factory in this case. Since these are often foreground elements, it's best to use a photo at a higher resolution, with accurate lighting and a similar viewing angle. Grab your cameras, go out and start stocking up framing elements for your image library.

22 Colour overlay Get a photo of an environment or landscape that closely matches your image, ie the lighting, colour and time of day. We need to extract the qualities and mood present in the photo and bring them in to our creation. Next place a new layer at the top of the stack and apply a 70px Gaussian Blur. Set to Soft Light then lower Opacity to 10-15%. You'll see a big difference when you toggle this blurred image layer on/off.

23 Chromatic aberration This is a prominent quality you'll see in most photos. Study a photograph and you will see that the edges have blue and red light fringing. We can emulate this flaw in Photoshop; just go to Filter>Distort>Lens Correction. Set Chromatic Aberration values to Fix Red/Cyan Fringe +5 and Fix Blue/Yellow Fringe -5.





24 Film grain To add the final touch, we need a subtle hint of film grain. Add a new layer, use the Marquee tool and roughly make a region an eighth the size of the entire image and fill it with white. Go to Filter> Noise>Add Noise and set Amount to 18%; also check Uniform and Monochromatic. Press Cmd/Ctrl+T to scale up the layer to the entire width of the image. Set the layer to Multiply blending mode then reduce Opacity to 10%.

Shortcuts

Practise memorising keyboard shortcuts, as knowing the basic quick commands gives you flexibility and speed when working. Let one hand do the drawing and the other work on the keyboard.

Artist Info

Mauricio Herrera
Personal portfolio site
el-grimlock.deviantart.com

I have been painting digitally and working in the genre of fantasy for 20 years, always trying to bring it a traditional look. Comic books, movies and videogames are my greatest inspirations, and I particularly enjoy painting creatures.

Paint sci-fi action scenes

Alien Mecha Attack 2012

Photoshop

Mauricio Herrera demonstrates how to bring dynamism and action to your sci-fi scenes

Paint sci-fi action scenes

When starting an action-packed image, one of the best things that you can do is to make a gesture sketch. Gesture sketches are quick drawings, taking no more than five minutes, that don't focus on being accurate but on capturing the mood and essence of a person or scene. This is particularly important when you want to create action in your painting because the lines and compositions you draw when you do quick sketches are full of energy themselves. You will need to have a clear idea of your scene – what characters it is going to include, what they need to be doing and so on – and a rough idea of how it will be composed. Once you know this you can put pencil to paper (or pen to graphics tablet) and see what happens!

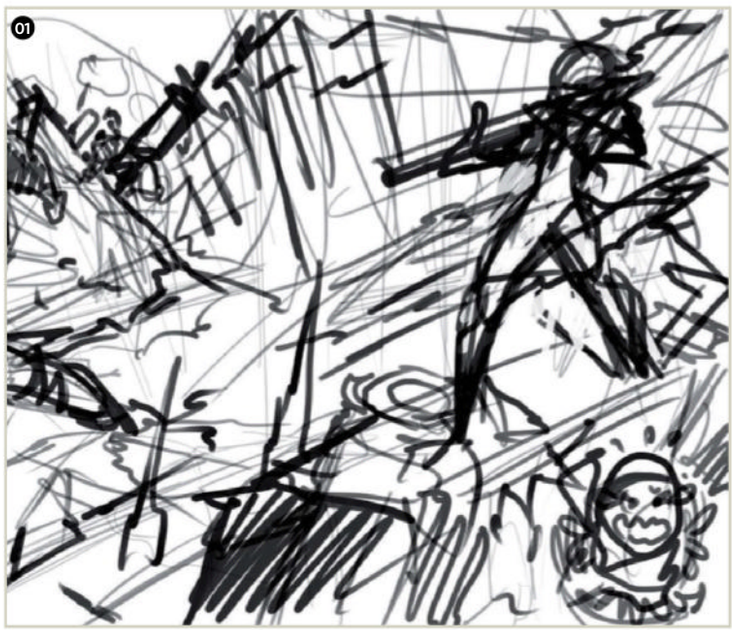
With some basic gesture sketches down you can start to work one or two up in more detail. You shouldn't focus too much on the small touches now because what you are doing is looking for the shapes, angles and forms that add interest and life to your painting and working on building those up.

As you finish working up these basic sketches you will start to find a balance between substance and form, shape and negative space – a compositional rhythm for your image. This might mean you want to move in a slightly different direction than your original composition plans, but that's fine. You should go with your instinct in these cases because your eye will tell you if something is unbalanced.

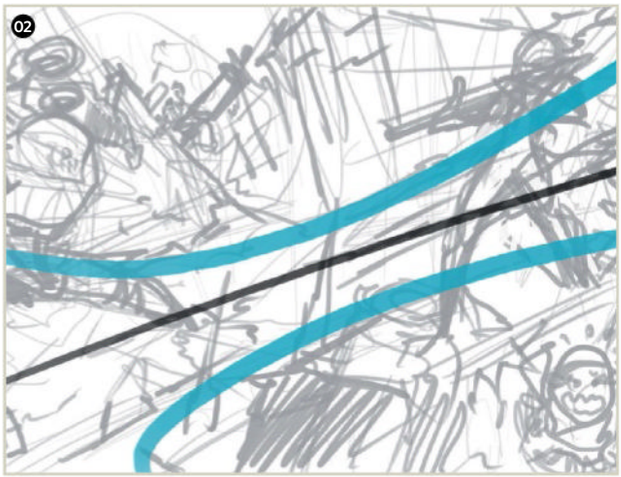
In this image we see a group of alien robots invading an ordinary street. This could look flat and boring, but because of the interesting shapes and angles a lot more life is added to the scene. The big robots are perfect for practising your gesture sketches and building up negative space because they're quite jaggy. Start with them and use stick people to find the rhythm and patterns that make the piece feel energetic and dynamic. Then you can build your drawing and finally paint over it. Find the tutorial files at **filesilo.co.uk/bks-890**.

Jump into action

Start from gesture sketches and work up to your action scene



01 Quick sketch Use extremely fast lines to sketch roughly and get a sense of the general concept. The contours and shapes should be defined and suggest some poses for the characters, and the inclination of the horizon should be clear.

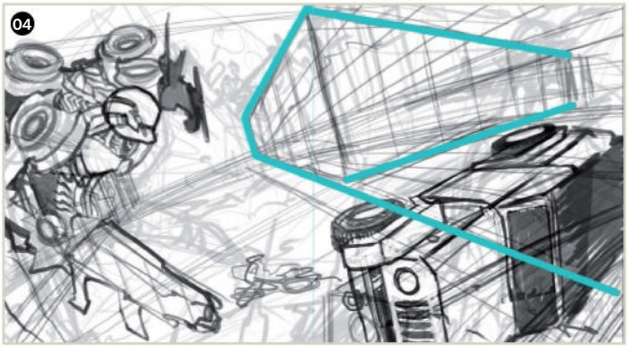


02 Behind the sketch The basic composition so far includes a tilted horizon line and two ovals in dynamic perspective, one in the sky and one on the ground. Try to place the characters and elements as you work up the detail without breaking this basic layout.

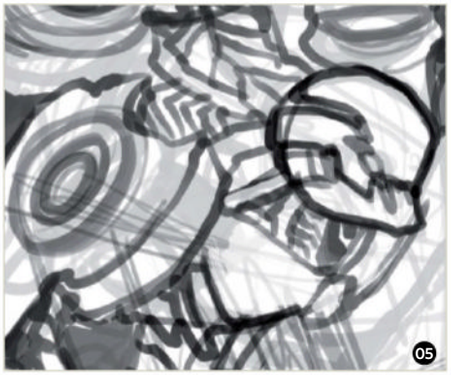
Audience perception

Include contrasting complementary colours if the audience is younger and avoid neutral tones unless your audience is adults. The first option helps the eye take in the focus instantly, while the second is better for more complex content and images.

03 Define the elements Define two important elements and the area they occupy. Here the large mecha in the foreground on the left and the upturned car on the right create a balance of form and substance.



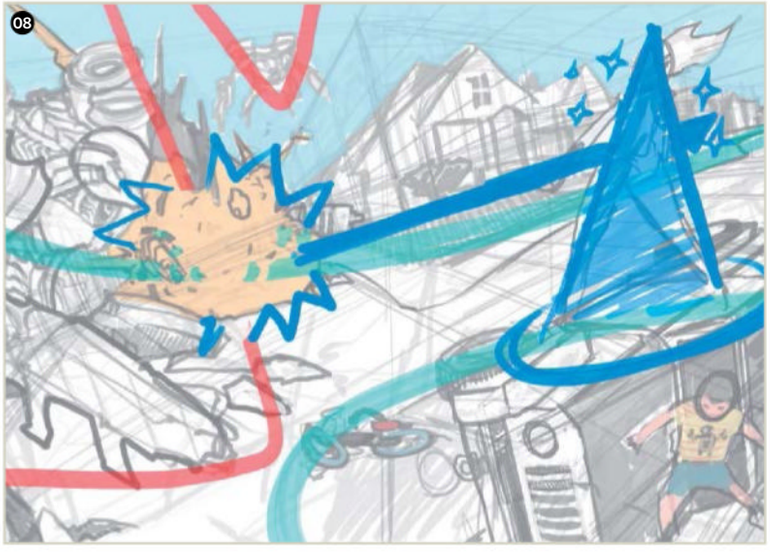
04 Define perspective Perspective is important in an action scene as it tells us how close we are to the action itself. The house in the background gives us a reference for size and scale while providing a guideline for the vanishing points.



05 Mecha character Create a robot design that is interesting and define its forms and structures. The helmet and face of this design is inspired by Japanese mecha, while the rest of the body is closer to Western industrial designs.

06 Separate sketch zones With the basic idea for the robot fleshed out, we can now start to look at the composition overall (the big robot will lead the eye so it's best to plan your key elements along this line). Here it's balanced, with the girl mirroring the mecha's position, but the image retains a dynamic angle for the action-packed theme.

07 Basic colour Rough out ideas for the colour. Strong, saturated hues add to the vibrancy of a scene while complementary colours help it hang together harmoniously. Blue and orange are the best candidates for this because they belong in the scene – blue for the clear sky the mecha are flying out of and orange for the explosion.



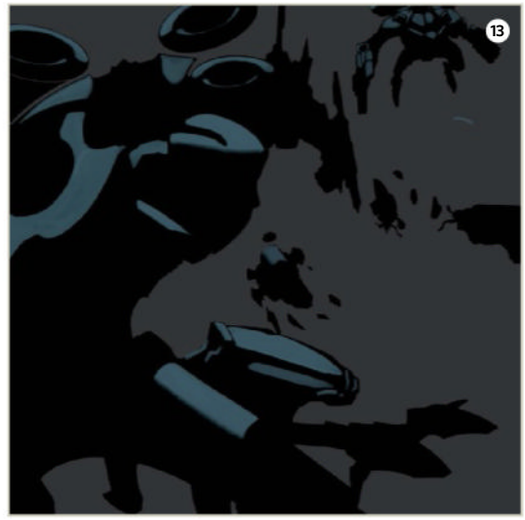
08 Shapes at war Something that can help you to imagine the composition is to imagine the shapes themselves fighting each other. It sounds odd, but when you work it up you should be able to see the lines of tension and force between them.

09 Balancing sides Now concentrate on balancing the image in a more formal way. Plan mini points and counterpoints to reinforce the main ones – here the young boy and the flying mecha provide the secondary rhythm.

10 Girl and rocket launcher The female character must not only be attractive, but also reflect the drama. She should be seen as a dangerous opposing force in this battle. Our character is a young woman who has picked up an abandoned rocket launcher to defend the small boy hiding behind the car.

11 Silhouettes Now you've worked up some more of the characters and the basic design, create a layer of silhouettes. You can review the poses to see whether they're effective and , if you're happy, use them as the base of your painting.

12 Paint with light On a layer in Normal mode above these silhouettes, paint over areas that would be naturally highlighted. The line art isn't too detailed, so you can improvise small items when necessary. Many people prefer to do this first in light grey, but working in colour is also an option. However you prefer to work is the best way for you.



13 Transition value Below this layer, make a new one set to Normal mode at 50% Opacity and paint only the shadow areas. Use the same colours from the layer with your highlights; they will seem darker because of the opacity. This technique is similar to cel shading which is used in animation.

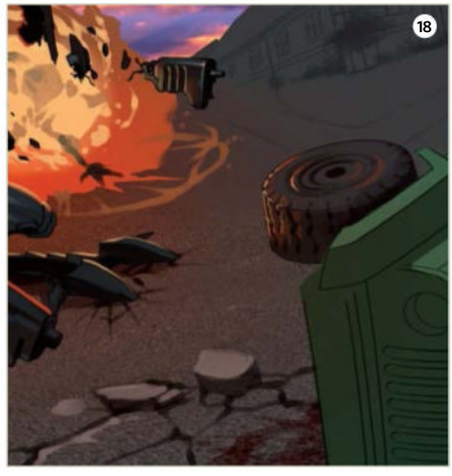
14 Simple and clean Add shape and volume now using very simple tools, such as basic gradients between your lights and shadows. Flesh out the structure and elements, but keep everything flat with no atmosphere at this stage.

15 An intense sky Ask yourself what time of the day it is, as this will dramatically alter both the lighting in your image and the sky where the lighting comes from. This scene is early evening, so a basic evening sky is painted in roughly.

16 Metal Bright or dark areas of metal can actually show different textures. Experiment with effects on light and dark parts, using several layers to blend. The light of this robot's glowing eye is created with a circular gradient on an Overlay layer.

17 Refine the explosion The explosion is still just flat shading, so in order to get across the idea of the exploding robot effectively, scatter the various blown-up parts out in concentric circles.

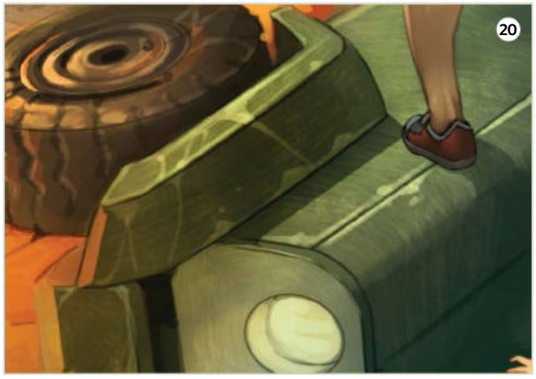
18 Rebound lights Place some textured soil to reinforce the sense of perspective and then focus on defining the space of the scene with light and shadow. A bit of warm light from the explosion rebound would hit the side of the robot, the wheel and the underside of the Jeep.



Sketch perfection

Make more than five quick sketches with different composition options, then reduce them in size and paste into a letter format to view and compare them. This helps you make sure that you choose the best option.

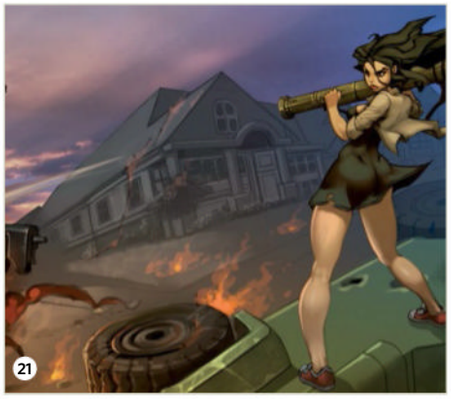
19 Alternate tasks It's good practice to move around your image concentrating on little bits at a time, as this helps build up the overall scene in a balanced way. Start working around foreground details now to build them up, like the Jeep and the metal of the girl's rocket launcher.



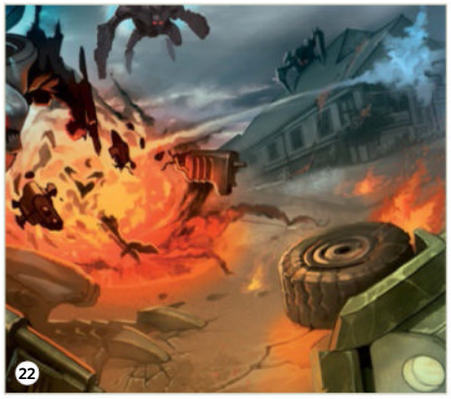
20 Texture on metal Texture metal surfaces such as the Jeep with brushes applied on a layer above the others. This layer should always be set to Overlay for a more realistic effect, and the brush tip settings can vary according to the desired outcome. In this case, the marks are made to look like threads of oil paint in a dry-brush style.

Learn new tricks

Train your eye to see common points in the work of different painters, for example the way their composition works or how they use particular colour harmonies for particular effects. Start doing this with a favourite artist, then try it with other artwork you look at.



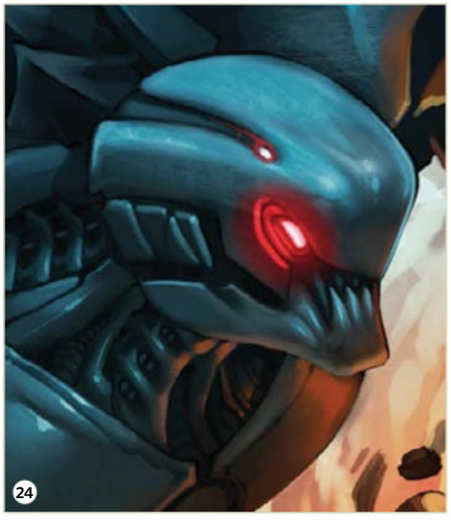
21 Background shading The houses at the back have less contrast because they're further away. This enables us to keep the focus on the characters. Remember, though, that the light that describes their shapes must be consistent with the more detailed areas of the painting.



22 Explosion and smoke effects Refine the stroke of the explosion, adding fire and smoke by the rocket launcher. Add blue streaks to show the propulsion using large gradients on an Overlay layer and then adjust the effect and choose the best shade of blue to fit the image.

23 Context Refine the details in the central foreground area, for example the boy's bike. Abandoned in the street at the centre of the image, it provides context for the action – the boy was riding it five minutes ago before the attack. Saving it until the end makes sure you get it right!

24 Final details With all of the elements in place and worked up, concentrate on making sure that they all have the same level of detail across the image. Work in sections with the foreground first and make sure everything that's on the same plane of the image has the same amount of finesse.



25 Background tweaks Review the colours and contrasts, make sure the background fades away properly and add any special effects. Try partially blurring, adding some depth of field, sparks and fiery embers or even bokeh lights to make the image feel more dynamic.

Create sci-fi weaponry

Photoshop MODO

Yana B3E Compact Assault Rifle 2013

Concept futuristic weaponry designs using MODO and a variety of hard-surface modelling techniques

Over the following pages we're going to take a look at concepting distinctive sci-fi-style weaponry. To achieve the final look we'll mainly be working with MODO's modelling tools, before moving to Photoshop.

During the steps I'll cover the major stages used in my workflow when creating similar concepts for movies and videogames. I've chosen to focus on a prop – what I call the Yana B3E Compact Assault Rifle – because it embodies all the key components of the 3D concepting workflow. However, this same process can be applied to a vehicle, a robot, or even an entire environment concept.

To begin we'll need to build up the mesh in 3D, apply shaders, texture the model, then render it and move to post-production in Photoshop. Find the tutorial files at **filesilo.co.uk/bks-890**.

This workflow is useful for any 3D concept artists out there, as well as anyone who wishes to develop their hard-surface modelling skills.

Create sci-fi weaponry

Concept

Here we'll explore the workflow for producing a weapon concept using MODO. Though 2D applications are also used, we'll demonstrate how you can produce effective concepts in 3D.

Artist Info

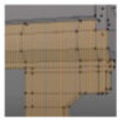
Gavriil Afanasyev Klimov

Personal portfolio site **www.gavriilklimov.com**

Location **USA**

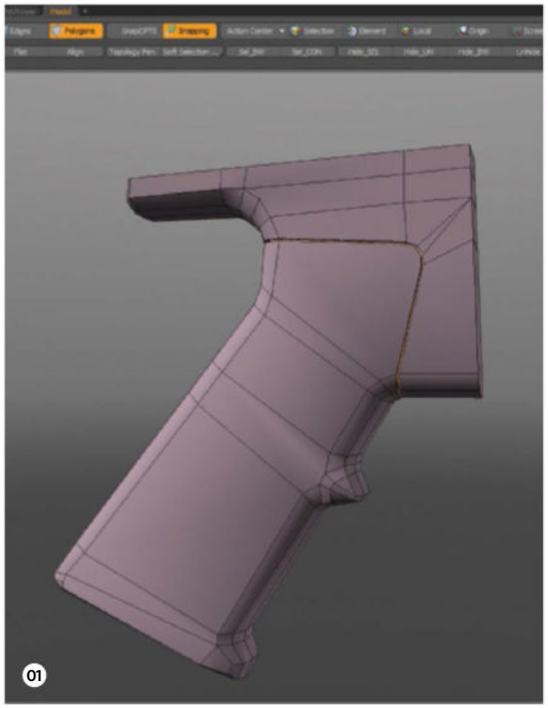
Expertise **3D concept design for the videogame industry**

Gavriil Afanasyev Klimov is a concept designer working in the videogame and film industries. He currently holds the role of senior concept designer at *Metal Gear Solid* creator Kojima Productions. Gavriil has generated concepts for many weapons over the years, all of which marry a sense of military functionality with sleek sci-fi design.



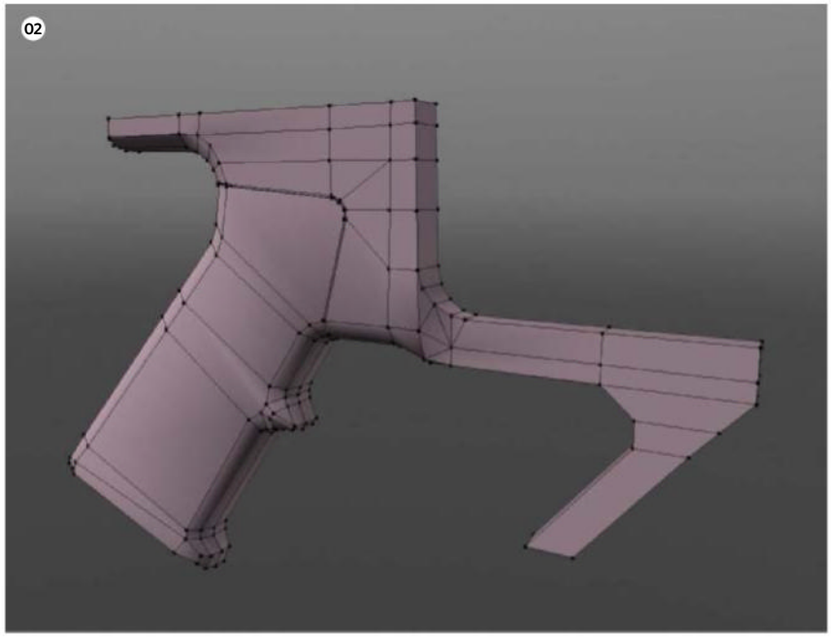
Start with broad forms

Block in the basic shapes of your weapon as a foundation

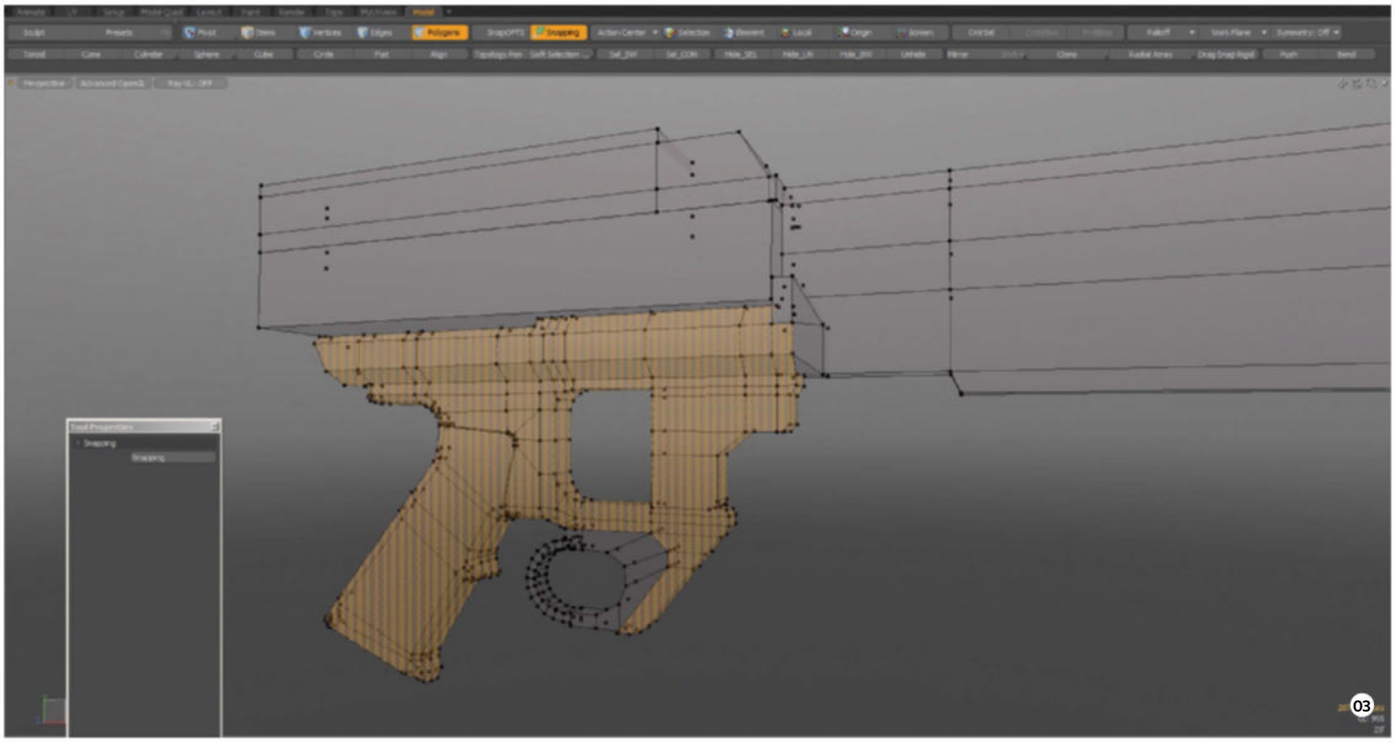


01 Block in the handle I always prefer to begin with the handle when working on the design for a gun, starting from a simple cube and blocking in the shape of the grip. Even when working on these early stages of the project, it's best to add some of the cut lines, as this saves time later on and makes the overall process much smoother.

02 Continue to form the shape Most of the functions used in the modelling stage are the same and consist of mixing Extrude, Bevel, Inset and Edge applications – all combined with the Move, Rotate and Scale tools. These are straightforward hard-surface techniques. The key here is to use your own imagination and creativity to develop unique and interesting shapes.



03 Use big shapes Now continue to block in the large shapes by simply extruding and slicing the mesh where you plan to have different components or cut lines later on. This ensures the mesh is somewhat more organised for the detailing work to come.

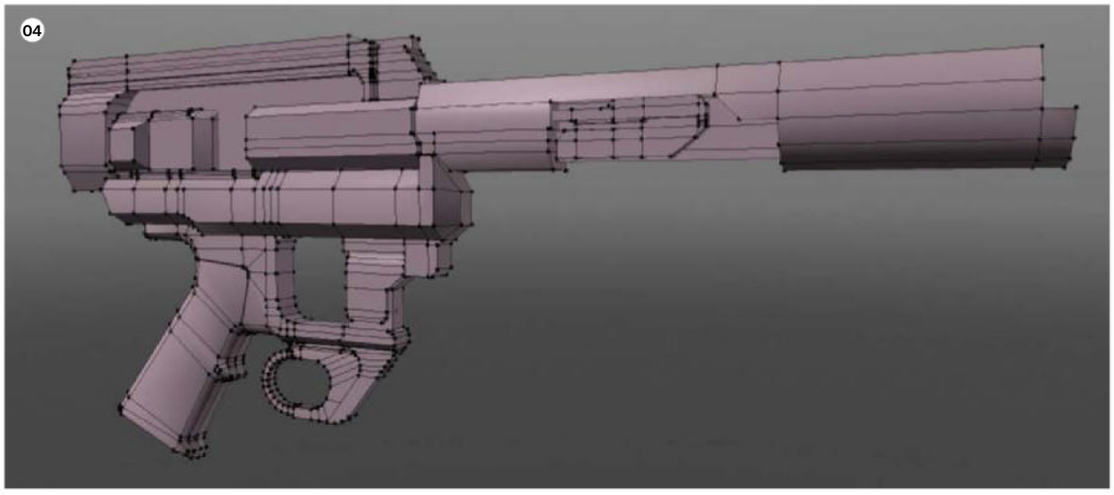


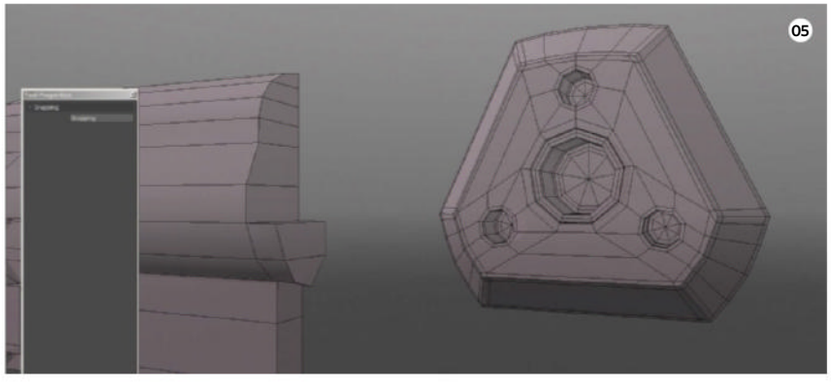
Add more elements

Develop the design and apply unique details

04 Experiment with your concept

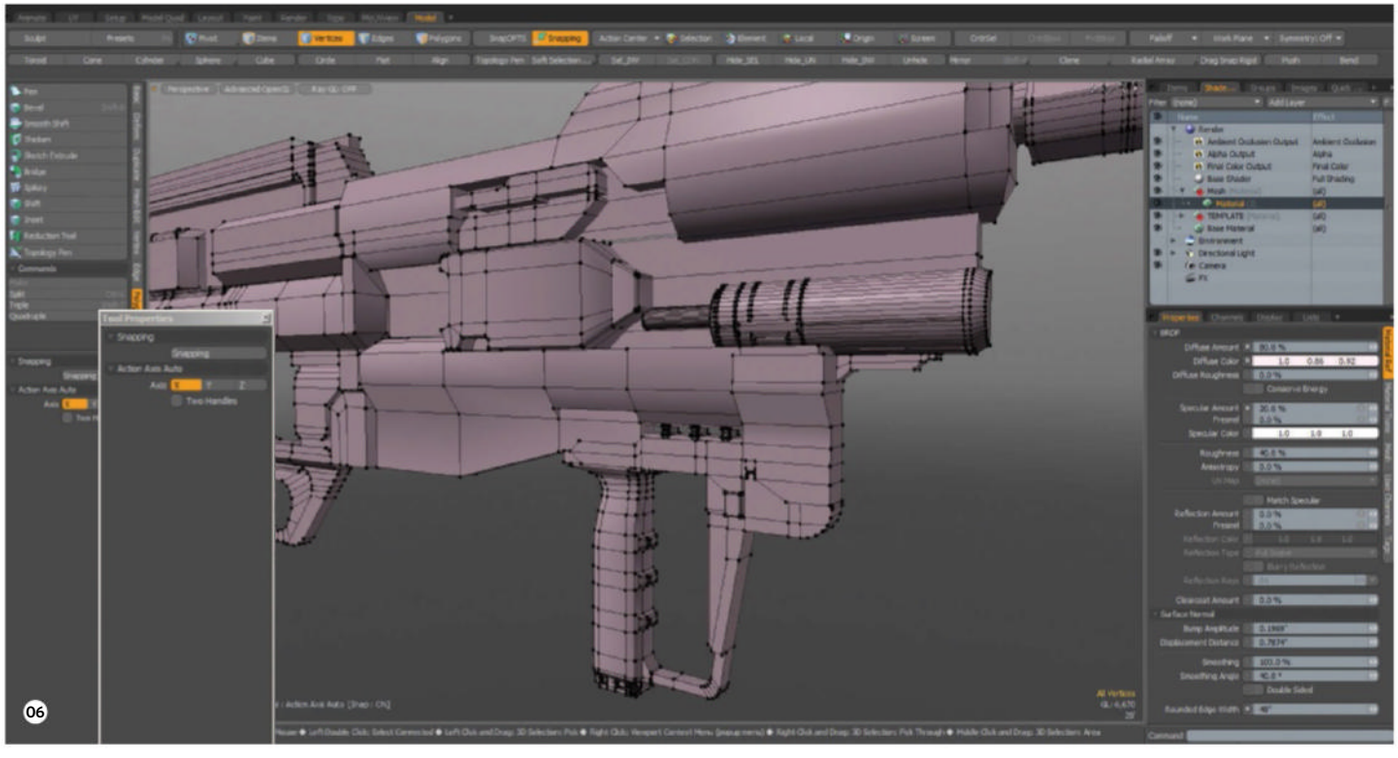
Continue to pull out the main shapes of the model by extruding, slicing and moving around edges and vertices. At this stage you're free to play around with your design and make a truly individual concept. Personally, I'm not always sure of what the end result is going to be, so I simply experiment with the various elements until I find something that works. If you're stuck, find a couple of images to refer to.



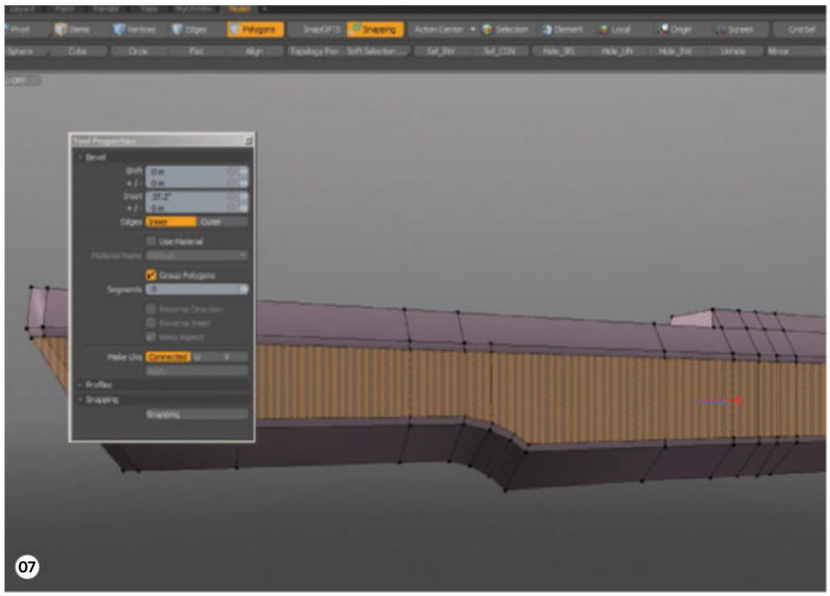


05 Attach a silencer At this point you can build the front silencer using the Drill/Stencil function to make the small holes in the shape. Try to think of different ways to make the objects more interesting. A usual cylindrical silencer is instantly recognisable, but sometimes making things look slightly different is a great way to end up with a finished product that stands out from the crowd.

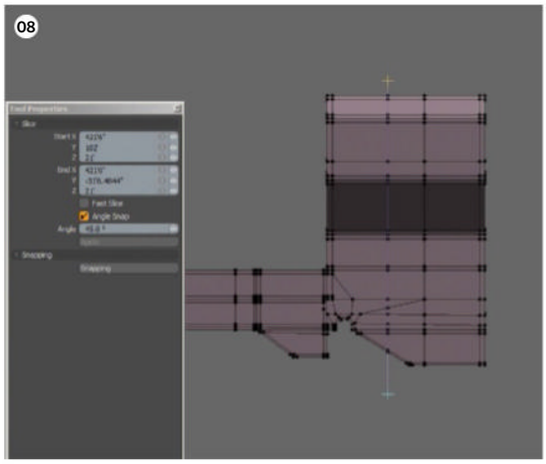
06 Add more definition This is another opportunity for experimentation, so keep blocking out the medium-sized shapes and add more of the major details. I tend to go with the flow here, with nothing specific in mind other than making sure everything looks like it works together.



07 Build the side panel Now grab all the faces needed to add an edge loop to and inset them. This gives an instant edge loop along said polys and enables us to just fix the ends (instead of cutting all along the polys' edges with the Slice function). This is a simple but very effective technique.



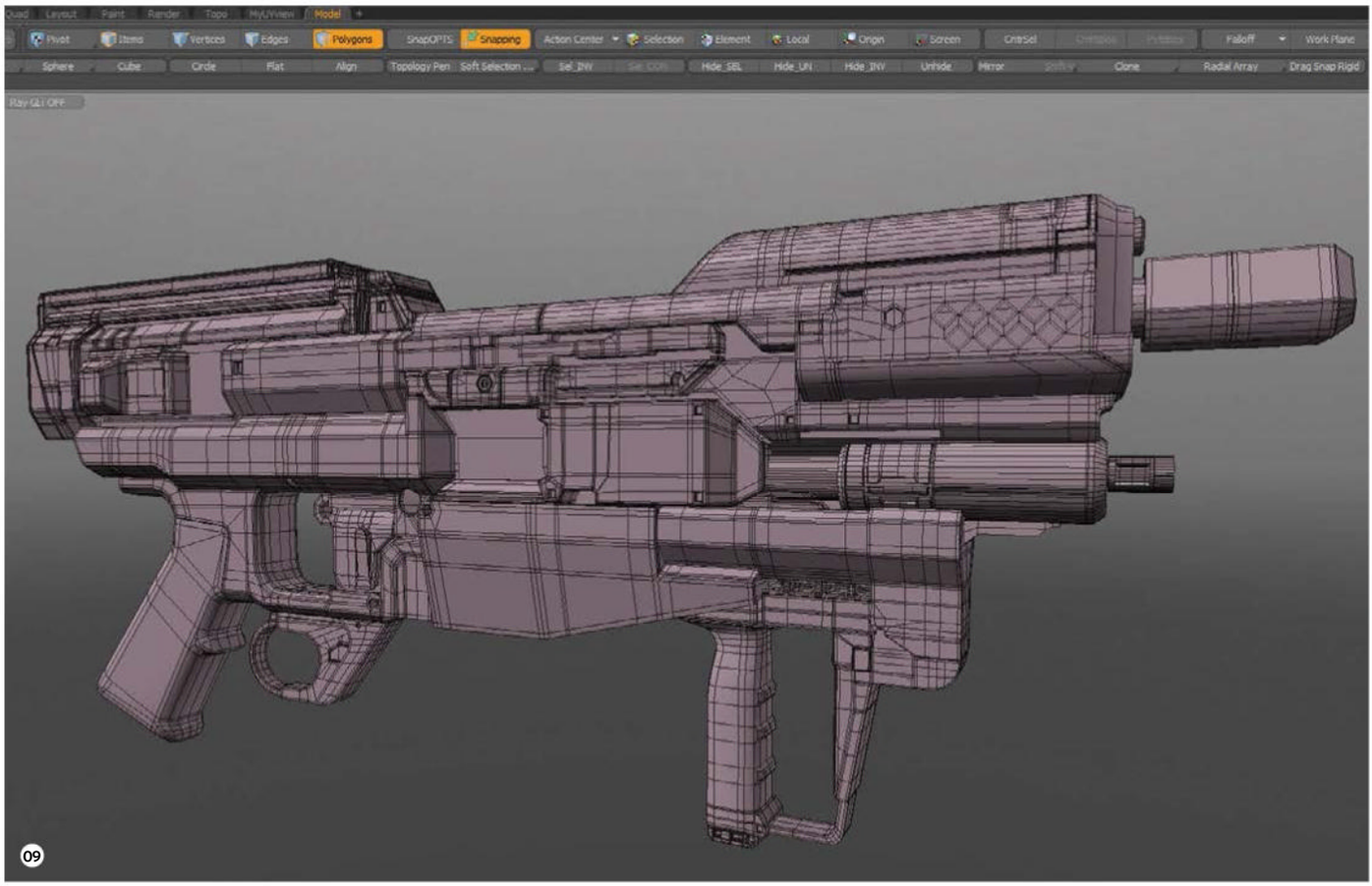
08 Slice it up I often use the Slice tool by simply entering Orthographic view and using it to slice an edge all the way across whatever is needed. This is an ideal method for moving polys and edges, as well as for producing insets in your image.

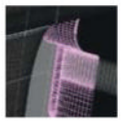


09 Apply more detail At this point the model is almost finished, but it's still missing some crucial details. The concept needs to appear interesting, but functional, so add small aesthetic elements such as grips and attachments that give the weapon that extra something. As a concept artist I have a kitbash library stocked full of smaller assets, which enable me to avoid spending too much time on this stage.

Finishing the model

After Step 9 the bulk of the model should be complete and we're past the most difficult and tedious part of the job. Whenever I finish the mesh, I consider 80 per cent of the job to be done, as texturing, lighting, rendering and post-production all tend to be quicker and much more fun to execute (apart from when using UVs, which for most concept projects I avoid).

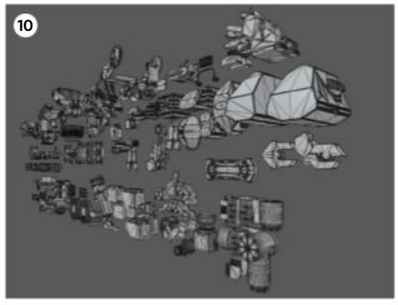


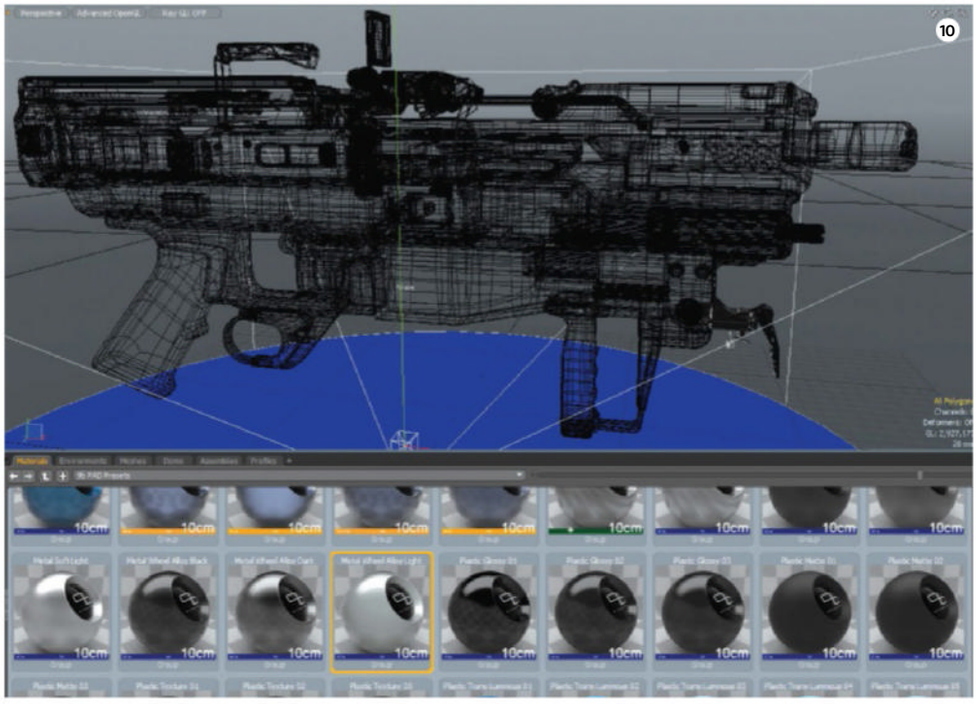


Move to post work

Finish with kitbashing and Photoshop

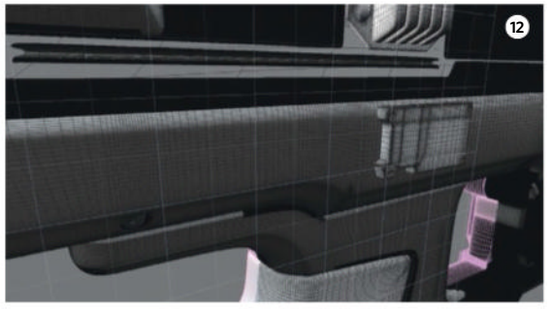
10 Kitbash and shading At this stage I pull up one of my kitbashing libraries that has been designed specifically for props and weapons. These are mechanical parts that are easy to fit here and there by playing around with them. Having purpose-built libraries for detailing is ideal if you want to save time in the final stages of modelling. After all the detailing is finished, move to the Render tab and, using the MODO Live preview, start selecting the different objects and assigning them with the materials you wish to be applied.





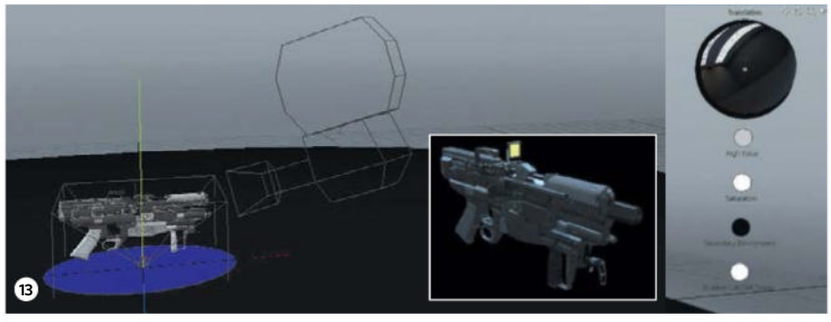
11 Test with HDRIs I prefer to check the look of the gun in progress using multiple HDRIs for the background, just to keep it in check under different lighting scenarios. I believe it's very useful to see how the model looks in different lighting setups, as usually a good model can hold up nicely in almost every situation.

12 Freeze the geometry Try freezing the geometry when you're about to render, so the mesh gets a higher density and becomes smoother. At this point you don't have to be too concerned about the poly count, just keep looking for the utmost quality in the final render.



Working in 2D and 3D

The ratio of 3D vs 2D in my work is often decided by the deadline and the type of work I'm doing. If I have to deliver a whole environment in a very short period of time, it's very likely the Photoshop percentage will be higher than the 3D one. On the other hand, when I'm given a lot of time, I prefer to work with 3D software as much as possible.



13 Set a scene For most prop and weapon shots I use many of the great presets that MODO has on offer. In this case the scene used to render the gun is from the Studio Environment Set 1 from 9b Studios. As far as the rendering is concerned, a powerful workstation will only take a couple of minutes to render to a finished quality.

14 Finish in Photoshop After producing the raw render, you can bring it into Photoshop for the final touches. These include applying an aging effect, additional texturing, graphic design and so on. After modelling, this is the part that is most enjoyable and presents the most creative freedom.

Produce comic book style renders

No Place To Hide 2015

Photoshop 3ds Max V-Ray

Use 3ds Max and VRayToon to visualise an aircraft concept and bring it into a virtual comic strip world

In this tutorial, 3ds Max and VRayToon will be used to teach readers how to render in a comic book style. We will use multiple VRayToon outline settings and also make the image much more interesting by adding layers with Photoshop filters. Without rendering, the difficult part is to find other interesting details for the image without losing the main focus. After all, you can't make a good image without a focal point, so here we have to use the minimal elements to create the vitality for the scene. Download all the tutorial assets you'll need from **filesilo.co.uk/bks-890**.

Artist Info

Stefano Tsai
Personal portfolio site
www.stefanotsai.com
Country **United Kingdom**
Software used **3ds Max, V-Ray, Photoshop**

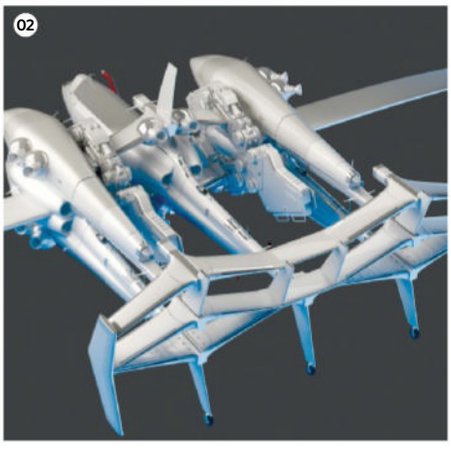
Begin with functional elements

Don't be scared to start from nothing

01 Start with an original concept The lightweight aircraft was created for the first chapter of the comic *BPI: Blue Patrol Industrial*. This is the vehicle for bringing the main character into the world. To make it more realistic, it contains a lot of functional elements for both the exterior and interior. The original concept has colours and a realistic V-Ray render. The challenge here is to bring this to a comic book style but still keep the excitement for these important assets.

02 Apply the simple grey materials It is so much easier to start with an empty sheet for a new style because it gives less distraction. It is a bit scary to start from nothing but it is definitely the most effective way to kick in.

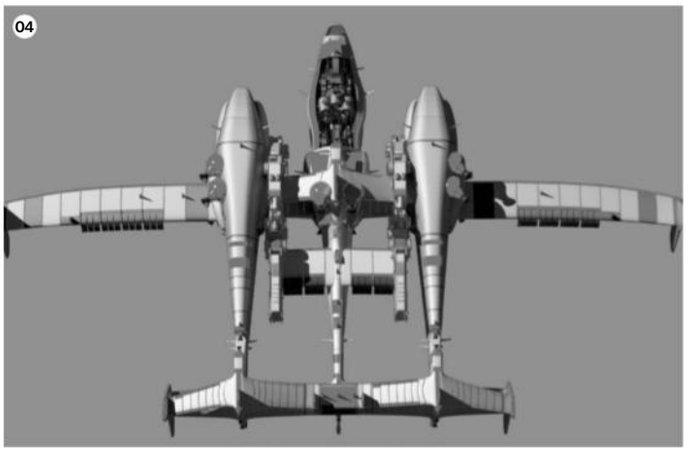
I took the concept models and applied a few grey default V-Ray materials. Some of them are reflective and some of them have a bit of a darker grey colour.



Learn how to

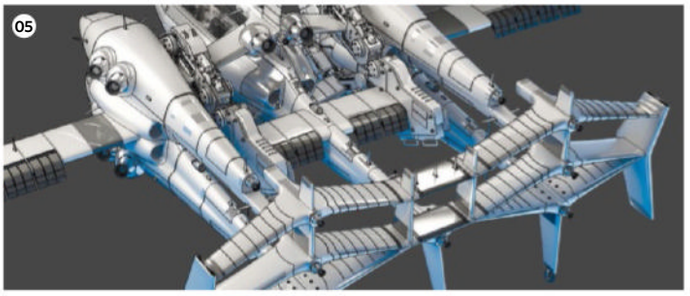
- ☑ Make a comic image with VRayToon rendering
- ☑ Add diversity to VRayToon outline widths
- ☑ Use Photoshop filters to make the image interesting
- ☑ Bring a comic-style effect to rendered scenes

03 Make a few differently toned materials Now we use a range of greys, with some greys more intense than others. We also add an engineering shade of orange into the aircraft to bring in a bit of excitement. We only add in one more colour here; if we make it too complicated it will kill the simplicity of the comic style we want our artwork to achieve.

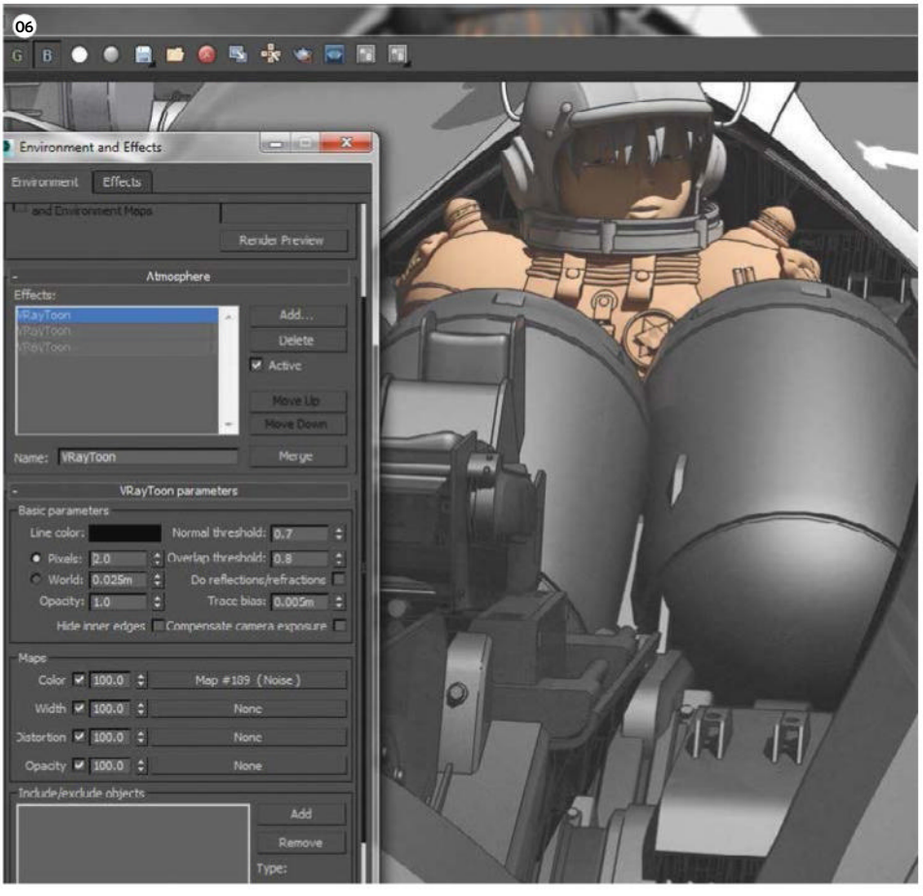


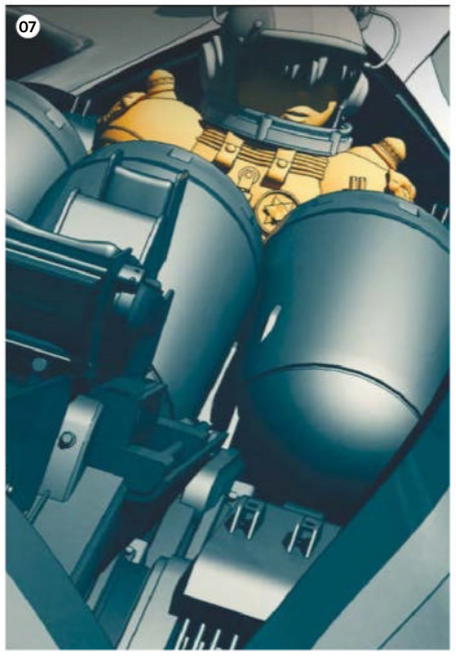
04 Start applying multimaterials We've applied six materials to the models, and the comics usually use only a few simple tones to completed images. Here we keep orange for the character suit as the character needs to be the camera focus, so it needs to have more visibility and to be the focal point. Using the remaining five colours, play around with different portions and combinations for the best balance.

05 Turn on VRayToon render With VRayToon render on, we now also have the outlines around the models. It gives the models the right kind of comic look. However, if we compare this to a cartoon production, the outlines here are a bit boring. This is because they all have the same width. If this is the only big object in the scene then that could be really dry for the viewer's eyes.



06 Play with line width To make it more interesting, we need to give it a different width for different objects. Create more than one setting for VRayToon, this way they can hold different settings for the different groups. For example, you can use less obvious lines for background elements and use stronger lines for the area that is nearer the focal point.



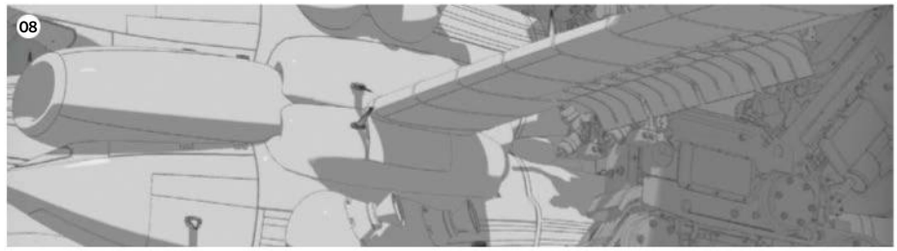


07 Play with strong lights With all the different line groups set up, we now have more visual variety. The background elements were pushed back and the focal point now lands on the character area. However, if there is no light there is no life. Lighting does play a very big part in a good image. Here we placed a strong sunlight and made sure the edge of the shadow lay on the character's face, so there will be a main focal point for this image.

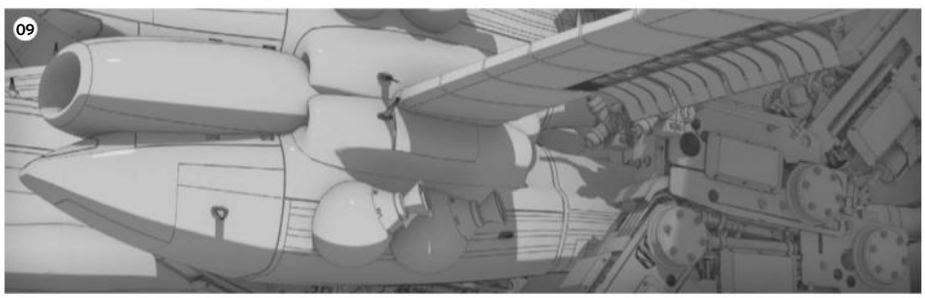
Create a focal point

Use lighting and filters to create a focal point in your image

08 Take a comic scene as an example Here we took a comic scene to show how we turned it into a comic-style page. This is an aircraft launch scene, the patrol aircraft is going to be launched through the catapult. First, use the same VRayToon outline setting from Step 1 to apply to all elements and make sure the lighting has been put into the best place so it can cast a good shadow and make a good focal point. The area near the middle left in our image is the main point of focus.



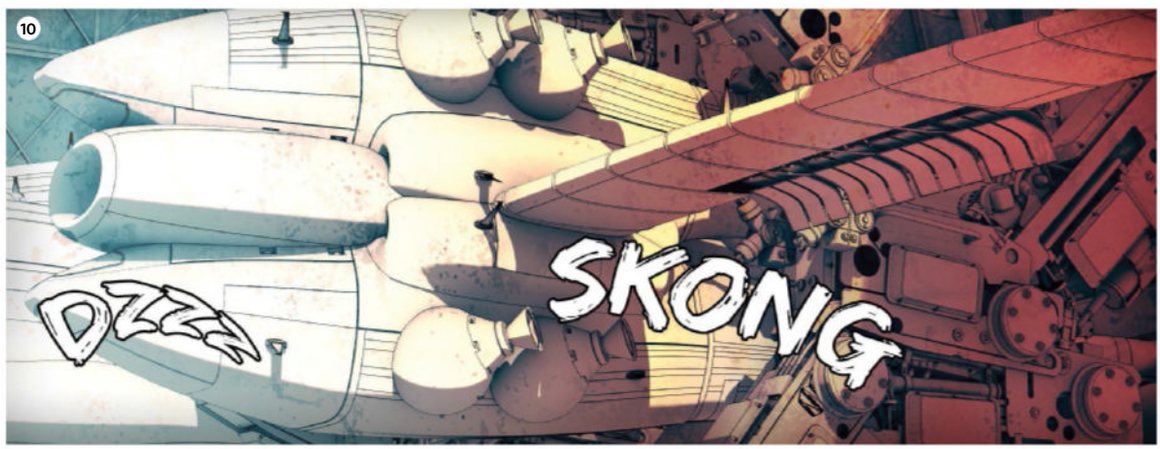
09 Add AO This vehicle is for a comic style, we should keep it flat looking. However, since we made all of this in 3D, there is no reason to not take advantage of 3D software. We took the same models and rendered out their AO, known as ambient occlusion. If you are a V-Ray user, there is a handy script called Vray Ambient Occlusion by **populate3d.com**.



Liven up the scene

After setting up a basic VRayToon, we now have the beautiful toon shader lines around the 3D models. We started to focus on how to bring life into the scene. To make it feel more humanistic, we can add more human details into it that can be dirt, noise, graffiti and so on. The strongest element you can use is lighting. Good lighting can give a scene new life or even bring it some drama that can help storytelling and build up the character's personality. Here we are going to use a bit of 3D software help to get an AO pass. Then we use Photoshop filters to help make different focal points across different cases.

10 Add details with Photoshop filters After applying an AO render in Photoshop's layer with multiply, start to add more dirt and noise details into the scene. To make it more interesting, apply more Photoshop filters – one on the left side of the image to make the lighting stronger and another one on the right-hand side of the image to add a red tone to create more contrast in the image.

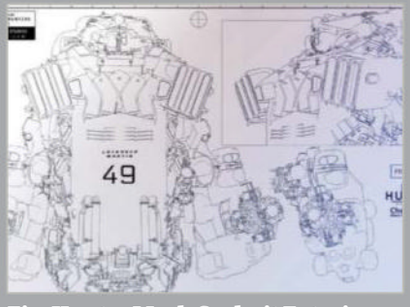


Artist Showcase

Stefano Tsai
Stefano is a concept artist, a designer, a dream machine and virtual environment builder living in the UK. He loves everything about details and has dedicated his life to this since he was a child. He enjoys the process of bringing concepts to life.

FireHunter Set Concept
2015, 3ds Max, Photoshop
A concept for the short animation *Fire Hunters*. This is the concept for a lower street set with a lot of steam, machinery and advertisement boards going on and also some futuristic vehicles mixed with old, classic vehicles.

FireHunter Mech Cockpit Interior
2015, 3ds Max
Another piece of concept art for the short animation *Fire Hunters* – the concept for the cockpit of the mech. After trying a few versions of it, this is the one that I love the most.

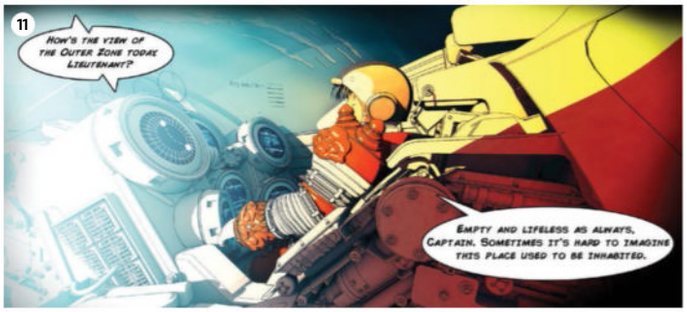


FireHunter Mech Cockpit Exterior
2015, Photoshop, 3dmax
This is an exterior mech concept for the short animation *Fire Hunters*. It is the chest section, but if you look closely you also can see the arms. This is the mech for the main character.

11 Make the interior shot The space is quite narrow for placing a camera for a special cabin scene. To make it work, you can either create a wide-angle camera or create a cross-section scene for the shot. We've chosen the latter and cut some panels off to make the shot possible. This also added more details for the scene and helps to show the depth of the story and believability of the aircraft.

12 Make a medium shot in the clouds For a medium shot, make the VRayToon lines much lighter and thinner. You can also add more environment colours into layers to help the aircraft to blend into the scene. To make it interesting, add a strong light on the left side to ease some attention and on the right side add a red tone colour filter to push the eye's focus to the centre of the image. We made the background terrain much darker so that it will not fight with the aircraft.

13 Make a distance shot
For a distance shot, sometimes you need to turn off VRayToon render to avoid the line noise on small objects. Here the aircraft becomes small, almost like a dot. If we apply VRayToon to the aircraft, it will become too noisy and jump right to the front. However, we need it to be pushed to the background, so in this case, we turned off its toon shader, but the rest of the elements are kept the same. To create less interference, you can use a pure black material for some ground level elements, so that again the focus now lies with the aircraft.



Simplicity is best

I really like the movies created by Mamoru Oshii, Katsuhiro Otomo and Hayao Miyazaki. They have the true blood of Japanese animation – a visual feast of mechanical design. The concepts in these movies are just so inspirational for artists. However, when you have started learning from their work, you should find that the truth behind all of the complicated mechanical and set design is 'simplicity'. That is, the magic of cartoon and comic. No matter how complex those designs are they will be united by the art director's eyes and harmonised by colours, lighting, mood – most importantly the final result is always so easy to watch and understand so that you feel the simplicity, energy and love put in.

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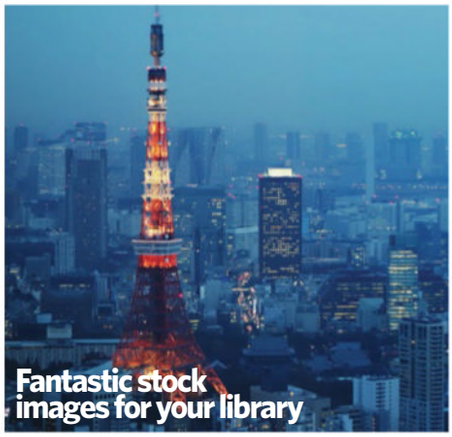

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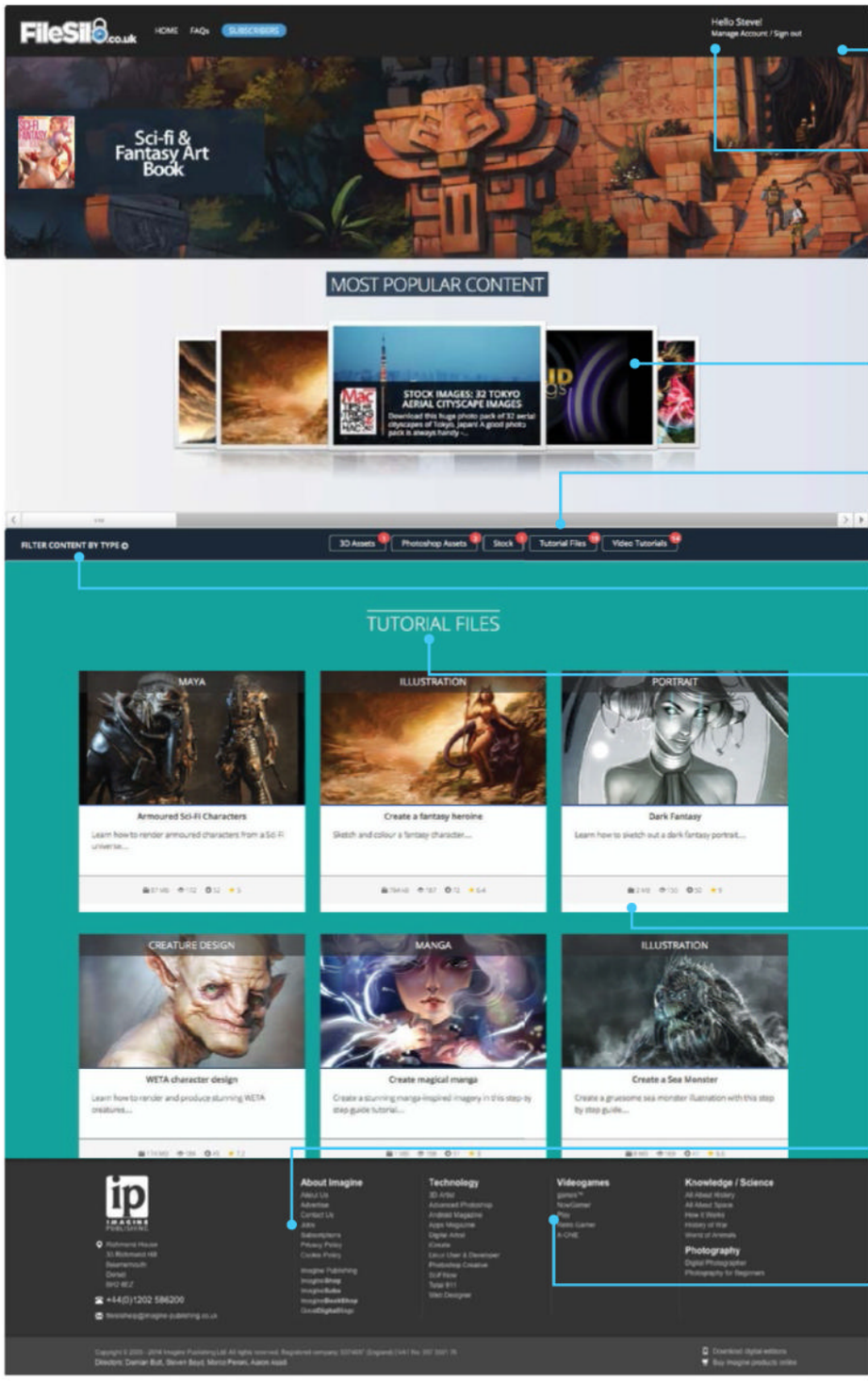

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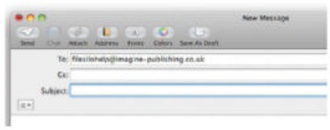

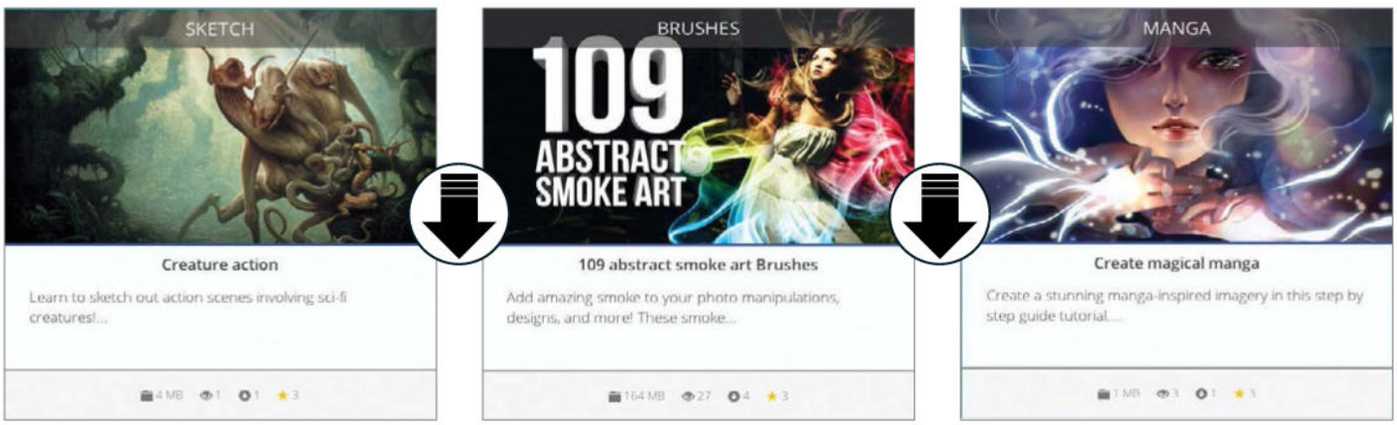

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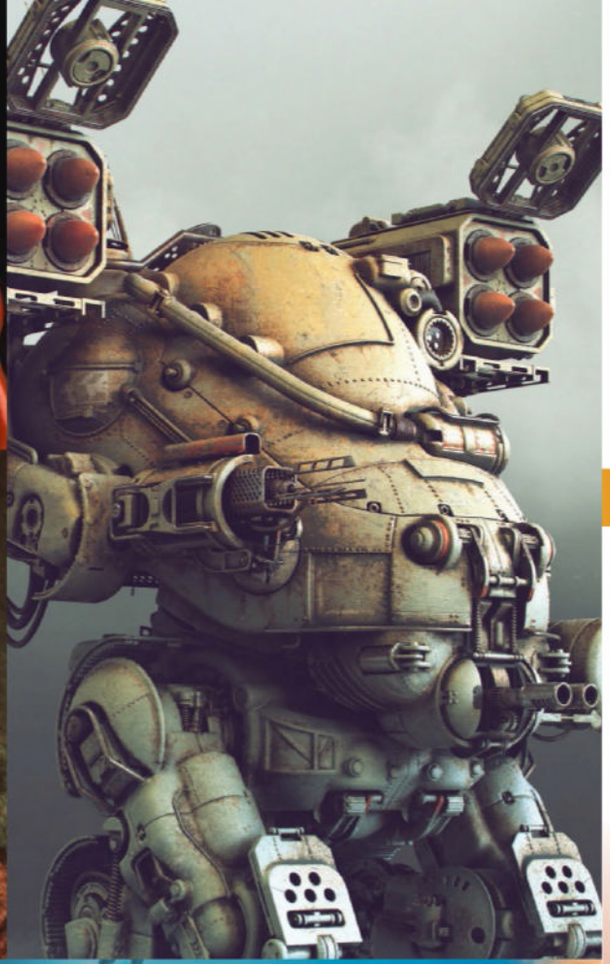

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